



HAYNES GUIDE

The Complete
Handbook

Approved by the
National Park Service

YELLOWSTONE NATIONAL PARK

REVISED EDITION

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TAKING A WILD ANIMAL'S PICTURE IS A
GREATER FEAT THAN KNOCKING IT
OVER WITH A BULLET

HAYNES NEW GUIDE

The Complete Handbook of Yellowstone National Park

By

JACK ELLIS HAYNES, B. A.

Approved by the
National Park Service
Department of the Interior

Forty-fourth Revised Edition
Illustrated

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Haynes

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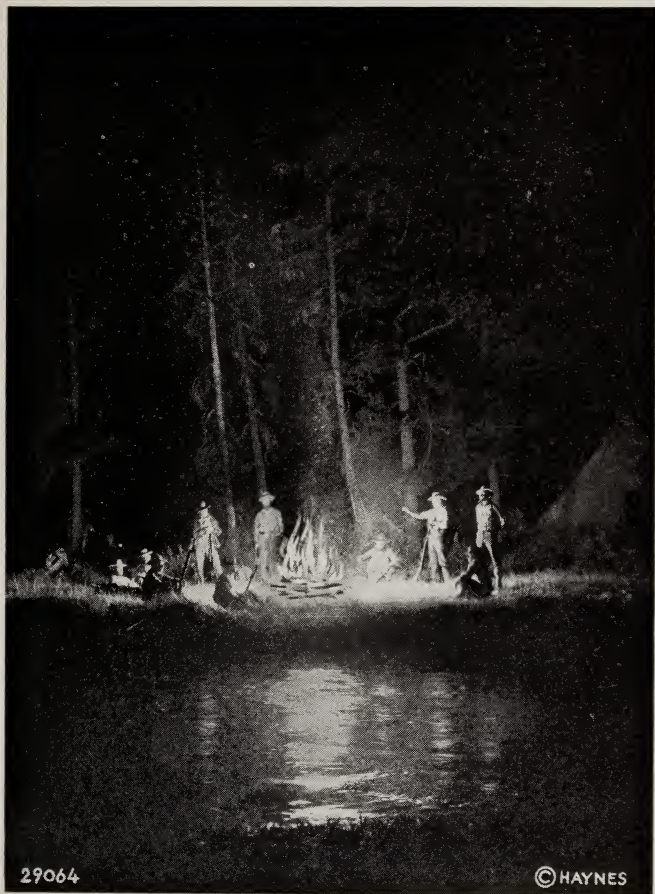
Yellowstone National Park

Saint Paul, Minnesota

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THE NATIONAL PARK IDEA WAS CONCEIVED BY MEMBERS OF THE WASHBURN-LANGFORD EXPLORING PARTY OF 1870 WHILE IN CAMP AT THE JUNCTION OF THE GIBBON AND FIREHOLE RIVERS IN THE AREA WHICH TWO YEARS LATER BECAME YELLOWSTONE NATIONAL PARK. (REENACTED ON THE SITE IN 1929).



OLD FAITHFUL GEYSER

Preface

TO ENABLE the visitor to find his way about Yellowstone National Park and supply him with a rather complete compilation of methodically-arranged information, and even to furnish those who already know the park a usable reference book, are the purposes of this enlarged handbook.

Travelers using this volume are able to find every object of interest seen from, or situated near the main highways and side roads of the park, as the mileage reading of the speedometer is indicated after the name of each feature.

The historical section is devoted principally to an enlarged chronology giving all of the essential dates and historical data relating to Yellowstone National Park.

It is our hope that the *Haynes Guide Book* will be a pleasant and helpful Yellowstone traveling companion, and an important enough source of information to justify a place in the permanent book collection of each reader.

Grateful acknowledgment for their most valuable assistance in revising this text is expressed to the administrative officers and staff of the National Park Service in Yellowstone National Park, without which this book would have lacked the accuracy and impartiality so necessary in a work of this kind.

With the kind permission of Dr. Arthur L. Day, co-author with Dr. E. T. Allen of *Hot Springs of the Yellowstone National Park* published in 1935 by the Carnegie Institution of Washington, several extracts are quoted from that monumental treatise in describing the important thermal phenomena of the region. We express our sincere appreciation of that privilege.

—Jack Ellis Haynes.

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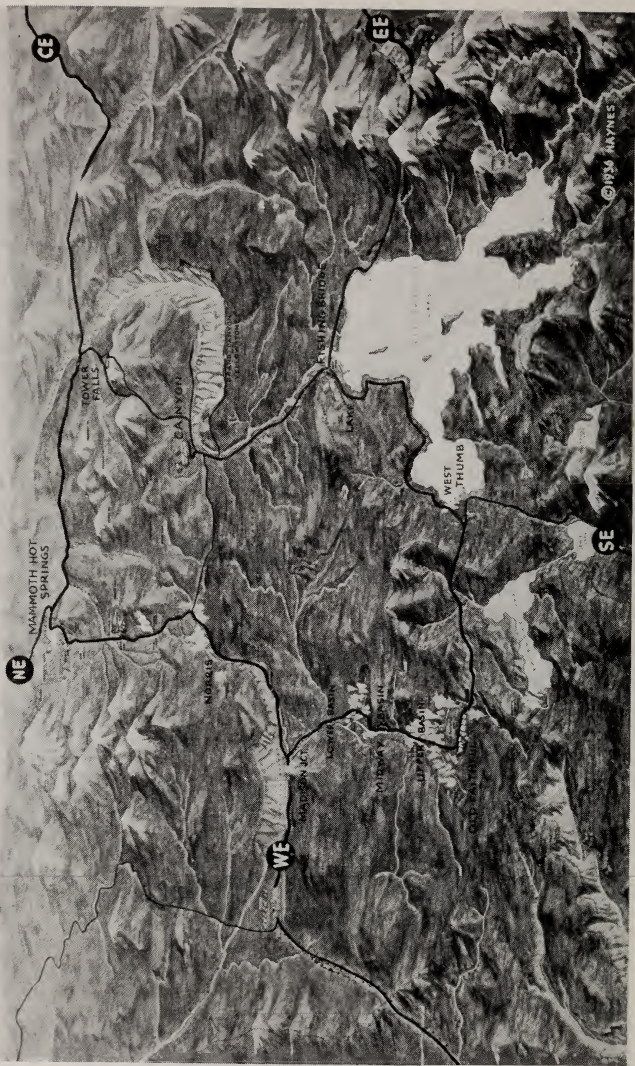
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YELLOWSTONE NATIONAL PARK PANORAMA—DRAWN BY J. E. HAYNES (NE—NORTH ENTRANCE; CE—COOKE ENTRANCE; EE—EAST ENTRANCE; SE—SOUTH ENTRANCE; WE—WEST ENTRANCE).

Introduction

YELLOWSTONE NATIONAL PARK, dedicated March 1, 1872 by the United States Congress, is the largest as well as the first national park of its kind established in this country.

It is roughly rectangular in shape and has a total area of 3,438 square miles, lying principally in northwestern Wyoming and encroaching slightly upon Montana and Idaho.

The park boundaries were changed by Act of Congress March, 1929, to include the curious Hoodoo formations which were formerly just outside of the eastern park boundary, the deposits of petrifications formerly just outside of the northwestern corner of the park, and several range summits. In 1932 some winter grazing land near the northern entrance was added to the park.

Within its boundaries are more and greater geysers than in all the rest of the world together, boiling springs and terraces, mud volcanoes and paintpots, the Grand Canyon of the Yellowstone remarkable for its gorgeous coloring, large lakes, many rivers and waterfalls, trout fishing, a vast wilderness comprising one of the greatest wild animal and bird sanctuaries in the world.

The administration of the park is vested in the National Park Service of the Department of the Interior. The Superintendent's office is at Mammoth Hot Springs. Throughout the park at strategic points are many ranger stations used by the National Park Service rangers who not only protect this vast property and its native wild life, but the hundreds of thousands of guests who come from all over the world each year to see it.

Several railroads operate to or near the park boundaries; the northern entrance at Gardiner, Montana, is reached by the Northern Pacific Railway; the western entrance at West Yellowstone, Montana, is reached by the Union Pacific System, and by automobile highway through Gallatin Gateway from Bozeman, Montana on the Chicago, Milwaukee, St. Paul and Pacific Railway and the Northern Pacific Railway; the



EDMUND B. ROGERS, SUPERINTENDENT OF YELLOWSTONE NATIONAL PARK,
APPOINTED MAY 25, 1936.

Burlington Route goes to Cody, Wyoming, 55 miles east of the eastern entrance, and the Chicago Northwestern Railway goes to Lander, Wyoming, 178 miles southeast of the southern entrance. The Cooke Entrance, reached by a splendid, new highway from Red Lodge, Montana, on a branch of the Northern Pacific Railway was opened in 1935.

Automobile highways lead to all park entrances. Small entrance fees are collected by the government for each automobile and motorcycle entering the park. In order to facilitate traffic and largely eliminate meeting other cars, automobiles go around the Grand Loop Road of the park in the direction opposite to that of the hands of a clock. Careful driving is demanded. A speed of 35 miles per hour is permitted on straight open stretches for passenger cars, but on grades and curves the speed is reduced. At the average elevation of park roads, 8,000 feet, automobile engines function better with a leaner gasoline and air mixture—there is less oxygen in a cubic foot of park air than air at sea level. Drive reasonably; signal on blind turns; keep to your side of the road; park only on straight stretches; watch for other cars, wild animals, horseback riders and hikers, if you would help make park highways safe for others—and for yourself.

It has been said that a hundred feet from the highways one finds a wilderness in the same virgin state in which early explorers found it. The only evidences of civilization are the government buildings, camp grounds, hotels, lodges, shops, highways, trails and telephone lines, all of which are operated to serve park guests.

The government has made available at many places throughout the park large public automobile camp grounds supplied with water, sanitation facilities, and some equipment for the free use of campers. It encourages camping in these areas where water supplies and sanitation are under control and where supplies are at hand; and also to minimize the fire hazard which would result from promiscuous camping in outlying areas that could not be patrolled constantly by National Park Service rangers.



(Top) SUPERINTENDENT'S HEADQUARTERS
HEADQUARTERS MUSEUM AT MAMMOTH HOT SPRINGS

Emulate the American Indian and build small campfires; and extinguish every ember before leaving camp. Beware of tree mold, logs and brush so your fire may be controlled.

Fishing in the lakes and streams is permitted under certain reasonable restrictions, but no hunting whatever is allowed. The trout waters of the Yellowstone are world famous; but one should remember that trout are wild and consequently not easily caught.

The companies operating in the park are authorized and regulated by the government. Suggestions for bettering the various services are welcomed by the companies and by the superintendent of the park. (Postoffice address: Yellowstone Park, Wyoming).

Consolidation of several companies as of June 6, 1936 resulted in the formation of the Yellowstone Park Company which operates the various hotels, lodges, tourist cabins, Camp Roosevelt and Mammoth Springs Lodge, boats and boat houses on Yellowstone Lake, the transportation fleet of yellow buses, and the cafeterias except at Mammoth.

The hotels operated in the park are Old Faithful Inn, Lake hotel and Grand Canyon hotel. Lodges, tourist cabins and cafeterias are at the principal stopping places in the park. Speedboats are operated on Yellowstone Lake for excursions including the famous Stevenson Island fishing trip; and smaller boats for fishing are furnished at Bridge Bay, Lake hotel dock and Lake outlet near Fishing Bridge.

Saddle horses are available at several stopping places from which interesting trips are taken to places not accessible by automobile. Competent horsemen and guides are employed.

Hamilton Stores, Inc., operates general stores at Old Faithful, West Thumb, Lake and Fishing Bridge, and the Swimming Pool at Old Faithful and gasoline stations at these points; also the curio stores in most of the lodges.

Pryor Stores operates general stores at Grand Canyon and Mammoth Hot Springs, gasoline stations at these points, and the Park Curio Shop and Cafeteria at Mammoth.

General stores at Tower Falls and at Tower Junction (Camp Roosevelt) are operated by Haynes Picture Shops, Inc., but the gasoline station is operated by the Yellowstone Park Company.

Haynes Picture Shops, Inc., operates shops at Mammoth, Old Faithful, West Thumb, Fishing Bridge, Grand Canyon and Tower Falls, and sales stands in all of the hotels and lodges throughout the park where full lines of park views, photographic supplies and books are available. Overnight photofinishing, originated by this company, is one of the popular features of its operations in the park.

The HOWARD EATON TRAIL parallels the Grand Loop Road and leads to the main points of interest at the principal stopping places in the park. It is one of the most scenic trails in America for horseback riders and is a round trip loop of 153 miles. It was named in honor of Howard Eaton, famous western horseman and guide and was dedicated in 1923.

Although unfenced the park is probably the best wild animal sanctuary in North America. Being suited to the habits of such a large number of species of large and small animals, it preserves them in their natural state free from molestation by the hunter. All animals that naturally inhabit this remarkable region are protected in every possible way. All hunters and poachers are rigidly excluded, and in winter, when it is difficult to procure forage, the elk and buffaloes are supplied with hay.

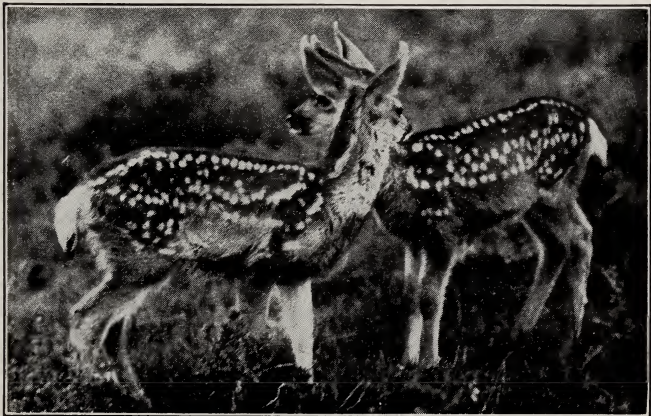
Official estimates of the important wild animals of the park according to the most recent census are: elk (Wapiti) 15,600 and in the Jackson Hole herd 19,000; mule deer 850; buffalo (American Bison) 950; moose 700; pronghorned antelope 700; black (including brown) bears 525; grizzly bears 260; and big horn sheep 150.

THE BEARS ARE WILD. A park "old timer" voices the feelings of most of the people who have spent several seasons in the park when he says: "Feed the bears? Not I! We who live in the park are AFRAID of them."

The National Park Service, through a corps of ranger naturalists, provides a complete free guide and lecture service available to all guests at the important stops in the park. These ranger naturalists are representatives of the government's information service operated in connection with the museums and information offices. No fees are charged, nor gratuities accepted by ranger naturalists, or any government employees in the park.

It is the duty of the rangers and the ranger naturalists to protect the natural curiosities. Carving or marking on the formations, collecting specimens, throwing things into pools or craters, and other acts of thoughtlessness would make the problem a difficult one without the help of park guests who realize that the park must be preserved for all time.

Museums operated by the Government Ranger Naturalists are at Mammoth Hot Springs, Norris Geyser Basin, Madison Junction, Old Faithful and Fishing Bridge. Roadside exhibits have been placed near the highways at several places to call attention to important natural phenomena, and give necessary explanations.



MULE DEER FAWNS

DISTANCES

AUTO APPROACH HIGHWAYS

Miles

Livingston, Montana to Northern Entrance (NE)	58
Bozeman, Montana to Gallatin Gateway	14
Gallatin Gateway to West Entrance (WE)	85
Salt Lake City to Western Entrance (WE)	380
Moran, Wyoming to Southern Entrance (SE)	24
Cody, Wyoming to Eastern Entrance (EE)	53
Red Lodge, Montana to Cooke Entrance (CE)	65

FROM ENTRANCES TO THE GRAND LOOP ROAD

Northern Entrance (NE) to Mammoth Springs (MS)	5
Western Entrance (WE) to Madison Junction (MJ)	14
Southern Entrance (SE) to West Thumb (WT)	23
Eastern Entrance (EE) to Lake Junction (LJ)	26
Cooke Entrance (CE) to Tower Junction (TJ)	31

THE GRAND LOOP ROAD OF THE PARK

Mammoth Springs (MS) to Madison Junction (MJ)	35
Madison Junction (MJ) to Old Faithful (OF)	16
Old Faithful (OF) to West Thumb (WT)	19
West Thumb (WT) to Lake Junction (LJ)	21
Lake Junction (LJ) to Canyon Junction (CJ)	14
Canyon Junction (CJ) to Tower Junction (TJ)	21
Tower Junction (TJ) to Mammoth Springs (MS)	19

Grand Loop Road total mileage145

ROUND TRIPS IN AND OUT THE SAME ENTRANCES

Via Northern Entrance (NE)	155
Via Western Entrance (WE)	173
Via Southern Entrance (SE)	191
Via Eastern Entrance (EE)	197
Via Cooke Entrance (CE) (Northeast Entrance)	207

EXPLANATORY NOTE

The Haynes Guide Book is so arranged that it serves equally well from all five park entrances. The tour from the North Entrance at Gardiner, Montana, begins on page 19; from the East Entrance, via Cody, Wyoming, page 90; from the West Entrance at West Yellowstone, Montana, page 51; from the South Entrance, via Grand Teton National Park and Moran, Wyoming, page 77; and from the Northeast Entrance, page 117.

Tour From Northern Entrance

(Via Gardiner, Montana)

GARDINER STATION (Mileage begins at Arch) of the Northern Pacific Railway, and the city of Gardiner are just outside of the park at the northern boundary.

THE NORTHERN ENTRANCE ARCH (Mileage 0.0) dedicated by President Theodore Roosevelt on April 24, 1903, bears the memorable inscription taken from the Act of Dedication of the park dated March 1, 1872, "For the benefit and enjoyment of the people."

THE GOVERNMENT CHECKING STATION (Mileage 0.0) is manned by National Park Service rangers who record all cars and motorcycles entering the park, and issue season permits upon payment of the entrance fees prescribed by Congress.

DISTANCES FROM NORTHERN ENTRANCE (NE) at Gardiner, Montana, to points outside of the park: Livingston, Montana 58; Glacier National Park via Great Falls, Montana 404; Seattle, Washington 970; St. Paul, Minnesota 1178; Denver, Colorado via Cheyenne, Wyoming 730; Los Angeles, California 1170; Salt Lake City, Utah 432; New York City via East Entrance A. Y. P. and Lincoln Highway 2527 miles.

—to points within the park; Mammoth Springs (MS) 5; Madison Junction (MJ) 40; Western Entrance (WE) 54;

Old Faithful (OF) via Black Sand Basin 56; West Thumb (WT) 75; Southern Entrance (SE) 98; Moran, Wyoming (Grand Teton National Park) 122; Lake Junction (LJ) via Old Faithful 96 (via Norris and Canyon 51); East Entrance (EE) via Old Faithful 122 (via Canyon 77); (Eastern Entrance (EE) to Cody, Wyoming 53); Canyon Junction (CJ) via Old Faithful 110; Tower Junction (TJ) via Old Faithful and Dunraven Pass 131; around the Loop to Mammoth 150; park round trip from Northern Entrance (NE) 155; to Tower Junction (TJ) via Mammoth 24, Buffalo Ranch 32.9, Cooke Entrance 51, Cooke 55 miles.

PARK MILE-POST MARKINGS. The principal symbols are NE (Northern Entrance), MS (Mammoth Hot Springs), MJ (Madison Junction), OF (Old Faithful), WT (West Thumb,



PRONG-HORNED ANTELOPE

of Yellowstone Lake), LJ (Lake Junction), CJ (Canyon Junction) and TJ (Tower Falls Junction).

FISH AND FISHING. In the Yellowstone and Gardiner Rivers and other waters in the vicinity of the Northern Entrance to the park are the following varieties: Redthroat (Cutthroat, Blackspotted, Native) Trout, Rainbow Trout, Scotch Lake (Loch Leven) Trout, Eastern Brook (Speckled) Trout and Whitefish. One may fish the waters of Yellowstone National Park without a license but outside of the park boundary in Montana one must have a license. Tackle may be procured at the stores in Gardiner, at the Dude Ranches and at the stores in the park.



NORTHERN ENTRANCE ARCH
EAGLE NEST ROCK (OSPREY'S NEST)

PRONG-HORNED ANTELOPE (Mileage 0.1) are frequently seen in bands grazing on the alfalfa field, which is maintained by the National Park Service. These keen-eyed animals, fleet of foot and timid, are preserved in their wild state in but few places in the United States. Unlike the elk, deer and caribou, the antelope are armed with hollow horns, like those of cattle, but unlike cattle they shed their horns each year, a long, pointed, bony horn core, covered by the undeveloped new horn always remaining. Three rabbits, or more properly hares, are found in the park. The VARYING HARE or SNOWSHOE RABBIT is the common species and is found only at altitudes below 8,000 feet. In autumn its brown summer coat changes to white and gives it continued protective coloration in the snowy landscapes of winter. A rarer species is the WHITE-TAILED JACK-RABBIT, which also

assumes a white winter coat, and is unique among our jack-rabbits in this character. It may be distinguished from the varying hare by its white tail and by its longer ears. It inhabits the lower altitudes near the north entrance in the vicinity of Mammoth Hot Springs where the Cottontail is found also. REPTILES are rare in the park region and it is a comforting fact that the rattlesnake is not found above 6,000 feet elevation. The average elevation of the park is 8,000 feet.

THE YELLOWSTONE PARK COMPANY'S GARAGE (Mileage 0.2) is seen at the left. It was completed in 1925 as the main Yellowstone Park garage of the company, which operates over three hundred buses and touring cars in the park, connecting with all entrances, and operating also to Gallatin Gateway, Grand Teton National Park and Cody, Wyoming.

GARDINER RIVER (Mileage 0.6) seen at the left, is a tributary of the Yellowstone River. The highway follows the course of this river almost to Mammoth Hot Springs, the park headquarters, five miles distant.

GARDINER CANYON (Mileage 1.3). If the motor labors and seems to have lost its power remember that you are ascending about two hundred feet per mile, although the road appears almost level. The elevation at the arch is 5,313 feet and at Mammoth Hot Springs, 6,238 feet.

EAGLE NEST ROCK (Mileage 1.5) high up on the cliff at the left supports an osprey's nest which is five feet in diameter and is inhabited every year.

MOUNT EVERTS (Mileage 2.8) is seen at the left, the most prominent sedimentary deposit (Cretaceous period) in the park. It was named for Truman C. Everts, who was lost in the region for thirty-seven days in 1870, after he became separated from the other members of the Washburn-Langford party.

MONTANA-WYOMING STATE LINE (Mileage 3.0) is indicated by a sign at the left of the road, about a hundred yards past the bridge. This state line is exactly half way between the north pole and the equator (45° north latitude), the same latitude as Bordeaux, Venice and Vladivostok.

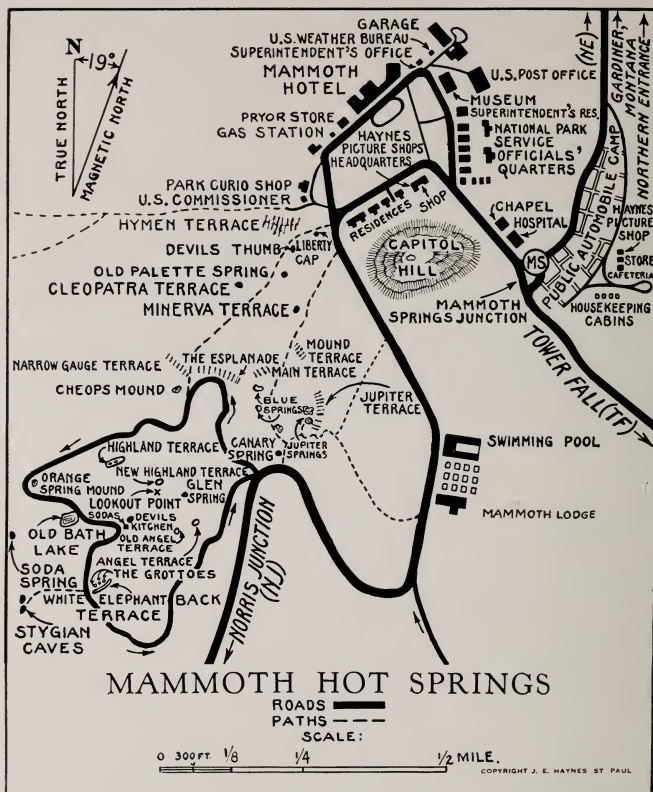


HAYNES PICTURE SHOP, MAMMOTH AUTO CAMP

BOILING RIVER (Mileage 3.6) enters the Gardiner River in the bottom of the valley at the left, at the foot of Mount Everts. On cool days steam is seen rising from this strange under-ground stream which is about six feet wide and a foot deep, and almost boiling hot.

MAMMOTH PUBLIC AUTOMOBILE CAMP (Mileage 4.1) is maintained by the Government, which supplies water, sanitation facilities and other conveniences. Nearby are the following utilities of various companies operating under government franchise throughout the park: housekeeping cabins, cafeteria, stores, fuel yard and Haynes Picture Shop (overnight photo finishing service).

MAMMOTH HOT SPRINGS JUNCTION (Mileage 4.5) (Symbol MS). The left road comes from Tower Falls; turn right to Park Hospital, Chapel (undenominational), Haynes Picture Shop headquarters, Post Office, Museum and Information Office, Superintendent's Office, Mammoth Springs Lodge, Stores and Terraces at Mammoth Hot Springs.



The HOSPITAL and YELLOWSTONE PARK CHAPEL (Mileage 4.6) are at right.

OLD FORT YELLOWSTONE (Mileage 4.7) a military post for many years was abandoned by the army in favor of the National Park Service officers, rangers, ranger naturalists and their families who now occupy all of these buildings. The National Park Service, a civilian organization under the De-

partment of the Interior, was created by an Act of Congress signed August 25th, 1916 by President Woodrow Wilson. The Service has the responsibility of administering all of the national parks and national monuments in the United States, Alaska and Hawaii.

HAYNES PICTURE SHOPS HEADQUARTERS (Mileage 4.7), at the left, was completed in 1929, replacing, but on a different site, the first Haynes Shop erected in the park at Mammoth Hot Springs in 1884. At all of the Haynes Picture Shops in the park in the hotels, lodges and automobile camp grounds the traveler finds a large assortment of pictures in all forms and sizes, complete stocks of films and other sup-



HAYNES HEADQUARTERS PICTURE SHOP AT MAMMOTH

34059

plies, books, and overnight photo finishing service. This shop at Mammoth besides the retail establishment houses the business headquarters of the company in the park.

UNITED STATES POST OFFICE (Mileage 4.8) until 1928 was the only Post Office in the park; in that year five contract postal stations were established at the principal stopping



MAMMOTH SPRINGS LODGE, ARCHITECT'S DRAWING

places in the park, and in 1929 a postal sub-station was established to replace the contract at Old Faithful, due to the great volume of business there.

THE HOUSE OF ANTLERS (Mileage 4.8) built wholly of horns and antlers by Chief Ranger Sam T. Woodring in 1928, interests thousands of park visitors. The moose shed their antlers in December and January, the antelope shed the outer sheath of their horns in November, the elk shed in February and March, and the deer in January and February.

MUSEUM AND INFORMATION OFFICE (Mileage 4.8) houses a wonderful collection of scientific and historical exhibits under the direct charge of the park naturalist, and the Information Office where ranger naturalists are always on duty to give information and directions about the park. Besides free pamphlets distributed through this office they have for sale Government and other publications for convenience of park guests. The Museum is free to the public as are all of the guided trips and lectures conducted throughout the park by ranger naturalists. Branch museums are at Norris Geyser Basin, Madison Junction, Old Faithful and Lake.

DISTANCES FROM MAMMOTH SPRINGS (MS)

	Miles
To Northern Entrance (NE)	5
To Western Entrance (WE)	49
To Old Faithful (OF)	51
To West Thumb (WT)	70
To Moran, Wyoming (Grand Teton National Park)	117
To Tower Junction (TJ)	19
To Buffalo Ranch	28.4
To Cooke, Montana	50
To Lake Junction (LJ) via Tower and Canyon	54
To Cody, Wyoming via Tower Canyon and Lake	133

MAMMOTH SPRINGS LODGE, being erected to replace Mammoth Hotel and Mammoth Lodge (Mileage 5) situated just south of the PARK SUPERINTENDENT'S OFFICE is owned by the Yellowstone Park Company which has its business headquarters here.

PRYOR STORE (Mileage 5.1), handling general merchandise, the gas and oil station just beyond, and the Park Curio Shop near the terraces as well as the cafeteria and store in the Auto Camp and the general store at the Grand Canyon are all operated by Mesdames Pryor and Trischman.

CAPITOL HILL, across the flat from Mammoth Springs Lodge, is a glacial moraine (the dumping ground of a glacier). The first superintendent's office was a block house built on top of Capitol Hill in 1879, while Indians were still hostile to the whites. It was razed in 1909.

OPAL TERRACE (Mileage 4.8) is near the foot of Capitol Hill.

HYMEN TERRACE (Mileage 4.9) is at the foot of CLEMATIS GULCH, in which gulch the first building in the park was erected. It was a log cabin built by a pioneer by the name of McCartney, and was the scene of early Indian encounters. Hymen Terrace, one of the most beautifully colored spots in the park, like all the terraces at Mammoth is composed of calcium carbonate called travertine, which is



(Top) OPAL TERRACE AT MAMMOTH HOT SPRINGS
LIBERTY CAP, AN EXTINGUISHED HOT SPRING CONE

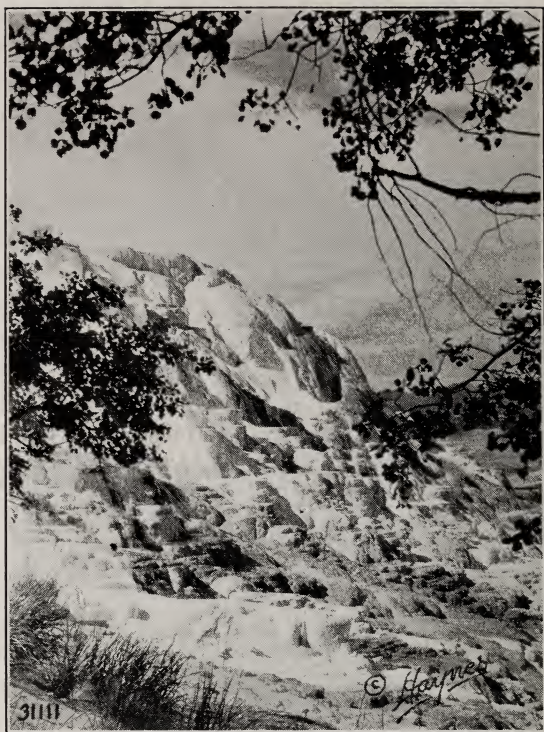
brought to the surface from buried limestone beds by the hot water.

LIBERTY CAP (Mileage 4.9) is the cone of an extinct hot spring, thirty-eight feet high and twenty feet in diameter at its base. CLEOPATRA TERRACE and MINERVA TERRACE are reached by foot paths from here; and MOUND TERRACE (Mileage 5.0) is the high terrace promontory at the right.

JUPITER TERRACE (Mileage 5.2), the outstanding deposit here, is part of the largest travertine deposit in the world. The colored coverings are composed of algae (a low form of plant life, which thrives in the hot and tepid waters). Dr. Eugene T. Allen, famous chemist, is authority for the following statements: that the heat is assumed to be the internal heat of the earth, brought up to the surface through deep cracks, mostly in the form of steam; that the water is chiefly derived from rain and snow to which is added the



PARK CURIO SHOP AT MAMMOTH



JUPITER TERRACE AT MAMMOTH

31111

condensed steam, so a little of the water comes from great depths; that the calcium carbonate comes from buried limestone beds, solution of the limestone taking place below the ground by water charged with volcanic gases; that the escape of carbon dioxide gas from the hot spring waters is the most important factor responsible for the deposition of travertine (which carbon dioxide gas comes from the rising volcanic gases); that the rate of deposition varies all the way from little or nothing to more than a foot a year.



(Top) SUMMIT BASIN SPRINGS
(Bottom) "HERE IT IS, MOUND TERRACE"

"Wherever there are vents, at least in hot ground, gases are escaping from the Yellowstone rhyolite today and it is not improbable that they have continued to escape since these rocks first saw the light." ("Hot Springs of the Yellowstone National Park", Allen and Day, pages 97-98.)

It is generally believed that the present active hot springs are flowing over deposits that are of comparatively recent origin; but the travertine of Terrace Mountain, and probably the deposit now seen on the western face of Bunsen Peak, are much older, antedating the glacial period as evinced by deposits of glacial drift on the summit of Terrace Mountain.

Decline in geyser activity. "That the total fund of energy supplying a group of hot springs which has probably been in existence for thousands of years, should show a perceptible change within the short span of half a century may be dismissed as wholly unlikely." ("Hot Springs of the Yellowstone National Park", Allen and Day, page 188).

SIDE-ROAD (Mileage 5.9) entering from the left leads to C.C.C. Camp, beyond which it is one-way, and may be entered only on Swan Lake Flat (Mileage 9.5) for the trip around Bunsen Peak.

JUPITER TERRACE PARKING AREA (Mileage 6.5) affords a splendid view of SUMMIT BASIN SPRING. Sheep Mountain is in the center distance, Mount Everts at right and Sepulchre Mountain at left.

SIDE-ROAD (Mileage 6.6). A loop side-road to the right leads to NARROW GAUGE TERRACE, ORANGE SPRING MOUND, OLD BATH LAKE, DEVILS KITCHEN, WHITE ELEPHANT BACK TERRACE, and near STYGIAN CAVE, to ANGEL TERRACE, thence to the main road at the point of leaving it. This side trip is well worth while as the variety of features is great and no one should leave Mammoth Hot Springs without going down in the Devils Kitchen, an extinct hot spring.

PHOTOGRAPHING. Ray filters are advantageous in photographing yellow buses, geysers and distant mountains. Snapshots and movies of the terraces are usually over-exposed, while close-ups of bears and buffalo are usually under-exposed due to their dark, non-actinic color. Be sure to get side-lightings on Liberty Cap and the terraces; and photograph the House of Horns, the Old Stagecoach, and your party at Liberty Cap.

ANGEL TERRACE (After returning to main road turn right, south, a few rods to a turn opposite Angel Terrace, and reset speedometer at this point at 6.7).

MULE DEER are usually seen along this section of the highway and attract considerable attention on the part of the traveler. The mule deer has large antlers which fork dichotomously, in shape like two Y's on each horn. Its coat is gray brown in summer and steel gray in winter.

AUTO SIDETRIP FROM MAMMOTH. A one hour trip which is well worth taking is to Golden Gate and Swan Lake Flat on the main highway taking the left side road immediately upon entering Swan Lake Flat. This road leads around Bunsen Peak to the rim of the tremendous canyon of the Gardiner River affording a good view of Osprey Falls and a splendid birds-eye view of Mammoth Hot Springs with Sepulcher Mountain at the left, Sheep Mountain in the center distance and Mount Everts at the right all covered in a drive



A MULE DEER BUCK

of about ten miles (this is a one-way road). On the return trip the road joins the Grand Loop Road near Jupiter Terrace.

HORSEBACK TRIPS FROM MAMMOTH. Ten mile round trip to summit of Mount Everts elevation, 7,900 feet. Ten mile round trip to Gardiner, Montana via old road. Twelve mile round trip around Bunsen Peak to foot of Osprey Falls. Fourteen mile round trip to summit of Mount Sepulcher, elevation 9,500 feet. Twenty-eight mile round trip to Sportsman Lake. Five mile round trip over the Ranger Nature Trail.

THE TIMBER WOLF is present in the park in very limited numbers. It is seldom seen. **COYOTES**, like the mountain lion, prey upon the young and diseased of many valuable species. They are numerous in the lower altitudes of the park; not infrequently their dog-like yelping is heard in the vicinity of the hotels. Washouts and holes in the sides of ravines furnish dens for the coyote. They multiply with comparative rapidity, having from five to seven puppies each year.

HORSE TRAIL (Mileage 7.2) at right goes to **SNOW PASS**.



THE HIGHWAY THROUGH THE HOODOOS



(Top) BUNSEN PEAK FROM GOLDEN GATE HIGHWAY
GEOLOGICAL EXHIBIT AT RYHO-TRAVERTINE GULCH

MAMMOTH RESERVOIR (Mileage 7.8) is seen in left distance.

SILVER GATE AND HOODOOS (Mileage 8.4). The highway from Mammoth Hot Springs to Golden Gate ascends so gradually that one does not realize that in three miles a thousand feet in elevation is gained. In the midst of the travertine Hoodoos a short side road leads through Silver Gate named for the silver colored stone blocks on both sides of the road.

RYHO-TRAVERTINE GULCH geological exhibit (Mileage 8.7) is at right of highway, and Terrace Mountain in right distance.

GOLDEN GATE (Mileage 9.1) is one of the most picturesque drives in the entire park. The sides of the rhyolite walls rise two hundred to three hundred feet above the highway, and are partly covered with yellow lichens, which suggested the name Golden Gate. This pass at 9.4 miles is called Kingman Pass for Dan C. Kingman, one of the early Government engineers in charge of park road construction. RUSTIC FALLS, at the upper end of Golden Gate Canyon adds a charm to this beautiful spot. This fall of Glen Creek is 47 feet high.

SWAN LAKE FLAT (Mileage 9.5) is immediately beyond Golden Gate. Side-road at left is taken for the one-way loop drive around Bunsen Peak. After crossing Glen Creek one sees at the extreme right ELECTRIC PEAK which is the highest mountain in the park. Its elevation is 11,155 feet. In the middle right distance are four apparently united peaks, at the left of Antler Peak which stands alone and Quadrant Mountain at the right. The four peaks at the left, reading from left to right, are Trilobite Point, Mount Holmes, and Dome Mountain (showing two peaks).

SWAN LAKE (Mileage 10.2) is seen at the right of the road. Geologists say that this lake once covered the whole of Swan Lake Flat. This is a spring-fed lake which is devoid of fish life but since 1935 Trumpeter Swans have nested here.

Along the park highways the PINE SQUIRREL is often seen, while the CHIPMUNK is likewise abundant. The KEN-



GOLDEN GATE CANYON HIGHWAY

NICOT SPERMOPHILE or PICKET-PIN GROUND SQUIRREL lives in the open country in places like Swan Lake Flat, and is seldom seen in rocky places or in the trees. This species hibernates even longer than the woodchuck, while the other squirrels hibernate little or not at all.

The WOODCHUCK or GROUND HOG is a rodent with a squirrel-like face and long incisors for gnawing. He is much larger than any squirrel and is of a rich brown color. He is often seen by the roadside sunning himself near his burrow. In autumn he does not store up a winter's supply of provisions like the squirrel, but takes on a quantity of fat under the skin, then goes quietly to sleep in his burrow for four or five months when the winter is severest, hibernating like the bear.

Leave SWAN LAKE FLAT (Mileage 11.1).

ANTLER PEAK is seen at right (Mileage 11.8).

SHEEPEATER CLIFF is on left side road (Mileage 12.6) less than a quarter of a mile distant.

Gardiner River bridge (Mileage 12.7).



MEALTIME AT A BEAVER POND

Look for moose (Mileage 14.4) in Willow Park.

BEAVER DAMS AND BEAVER EXHIBIT (Mileage 15.2) at right.

In the willows and marshy places along OBSIDIAN CREEK it is not unusual to see several MOOSE, which also frequent the area about Yellowstone Lake and the upper Yellowstone country south of the lake. The most famous but least known member of the cat family in North America is the PUMA, or MOUNTAIN LION; it makes its den among the rocks or in the dense forests and preys upon every creature that can be killed and eaten, doing much harm to young elk, deer, mountain sheep and antelope. The mountain lion is a good climber; it is tall for its weight, flat sided and on an average above seven feet long from tip to tip. In color it is a brownish drab. BOBCATS and LYNXES also occur in the park in small numbers.

APOLLINARIS SPRING (Mileage 15.9) is a few feet at the left of the main road, and is reached by ascending the stone steps. Across the road is a small automobile camp ground. Bears are learning that tourists often have candy and other tid-bits with them which accounts for the fact that one seldom passes this point without being held up by them.

OBSIDIAN CLIFF GEOLOGICAL EXHIBIT (Mileage 17.3) at right.

OBSIDIAN CLIFF (Mileage 17.4) while stony in appearance, being principally rhyolite, will reveal upon close inspection a large percentage of volcanic glass, chips of which when held against the light are almost transparent. Indians used this glassy material quite generally for making arrow and spear heads, as well as skinning knives. Generally speaking, it is black but some specimens of red obsidian have been found here. In front of Obsidian Cliff is a large marshy area which was once the rendezvous of many beavers and muskrats. The BEAVER is celebrated for his engineering skill in building dams, some of great extent. He constructs a water entrance to his house and a place below the freezing line for his winter supply of food. The favorite bark prized by



(Top) GEOLOGICAL EXHIBIT NEAR OBSIDIAN CLIFF
BEAVER EXHIBIT NEAR BEAVER DAMS



OBSIDIAN (VOLCANIC GLASS) CLIFF

34087

beavers in the park is the aspen. The MUSKRAT is found along the banks of streams where burrows can be made conveniently. It is quite as much at home in the water as the beaver, and like the beaver has a powerful tail which serves as a rudder in swimming.

BEAVER LAKE (Mileage 17.8) at right.

SEMI-CENTENNIAL GEYSER (Mileage 20.4) broke out August 14, 1922 in the large crater at the right of the road. The initial eruption threw mud and rocks in every direction and endangered traffic on the highway. After a few spectacular eruptions one of which was 300 feet in height it subsided and has not since played.

ROARING MOUNTAIN (Mileage 20.8) is seen at the left steaming from countless openings in its furrowed sides. Its ashen color and the muffled sound of escaping steam make this sight one to be long remembered. Near the highway at the base of the mountain are greenish milky pools fed by rivulets of sulphur water from the springs.

TWIN LAKES (Mileage 21.0 and 21.4) although situated close to one another are at different elevations and have distinctly contrasting colors.



(Top) ROARING MOUNTAIN
GEOLOGICAL EXHIBIT NEAR NYMPH LAKE

BIJAH SPRING (Mileage 22.4) is seen at the right.

NYMPH LAKE (Mileage 22.9) and geological exhibit.

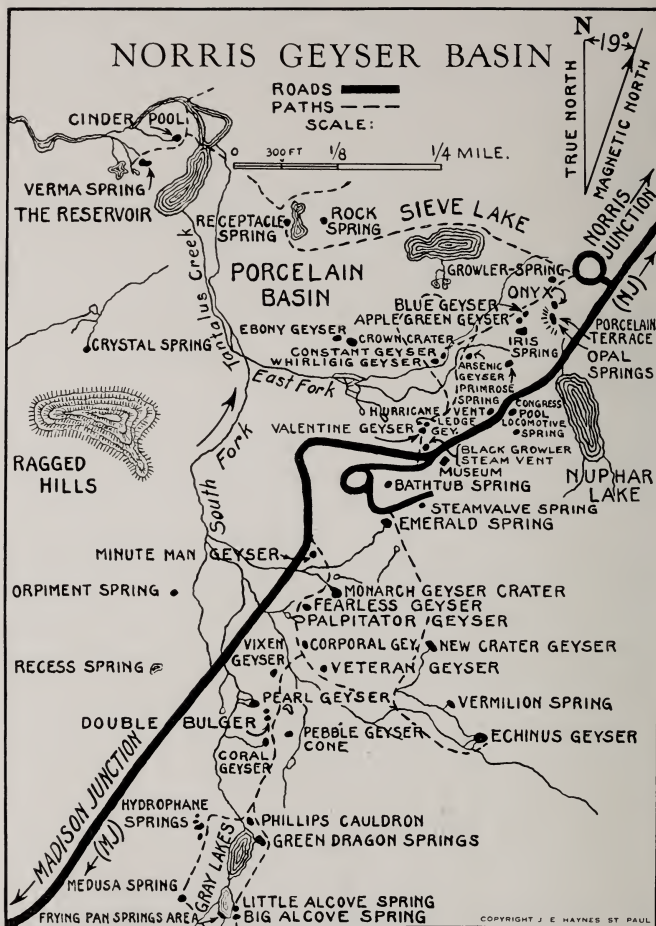
FRYING PAN SPRING (Mileage 23.0) adjacent to the highway at the right is interesting in that its shallow, hot water is kept constantly agitated by steam and other gases issuing through hundreds of openings.

NORRIS RANGER STATION (Mileage 24.8) and Norris PUBLIC AUTOMOBILE CAMP. Here we cross the GIBBON RIVER which flows in a southerly direction and joins the Fire-hole River. These two streams form the Madison River at National Park Mountain.

NORRIS JUNCTION (Mileage 25.2) (Symbol NJ) is the junction of the Grand Loop Road with the Canyon-to-Norris freight road (slow road—caution). Take the main (right) road to NORRIS GEYSER BASIN (Mileage 25.5), which was named for Philetus W. Norris, park superintendent from 1877 to 1882. Guests traveling by the yellow buses leave them here and walk from the PORCELAIN TERRACE past the many interesting springs and geysers to the Black Growler



MOOSE ARE SEEN FROM THE HIGHWAYS





NORRIS MUSEUM

30133

steam vent near the Norris Museum where they are joined by the buses. The footpath leads past the BLUE GEYSER, APPLE GREEN GEYSER, CONSTANT and WHIRLIGIG GEYSERS, to the LEDGE and VALENTINE geysers then to the BLACK GROWLER STEAMVENT.

NUPHAR LAKE (Mileage 25.6) is at left.

CONGRESS POOL (Mileage 25.7) is at left.

NORRIS MUSEUM (Mileage 26.0), completed in 1930, is the information headquarters for Norris Geyser Basin. It is operated by the National Park Service for the free use of all visitors. From here a trail leads in a southeasterly direction past BATHTUB SPRING and EMERALD SPRING to the NEW CRATER GEYSER, ECHINUS GEYSER and the Gray Lakes area in which there are many interesting sights.

The principal erupting geysers at Norris Geyser Basin are the Constant, Minute Man, New Crater, Whirligig, Valentine, Vixen and Echinus.

PHOTOGRAPHING. Remember to use the ray filter to darken the sky behind the steam columns. Do not attempt to photograph erupting geysers or steam vents without direct



(Top) BUS AT NORRIS MUSEUM
NORRIS GEYSER BASIN

sunlight; and be sure that the sun is at your side, and not behind you. Remarkable effects have been secured in photographing steam columns directly toward the sun but be sure that the steam obstructs the light. General views of Norris Basin are usually over-exposed. Excellent stills of geysers are made with filter at $1/25$ th of a second in good light at F11 or without a filter, at F16. Take movies of geysers at about F11 with 2X filter.

MINUTE MAN GEYSER (Mileage 26.1) is in the foreground at the left. At the foot of the distant hillside is the crater of the now extinct MONARCH GEYSER which was active for about twenty-five years.

CROSS TANTALUS CREEK (Mileage 26.2).

RECESS SPRING (Mileage 26.3) is reached by a spur road to the right. At the left of the main highway at this point a trail leads to the Gray Lakes area where are situated PHILLIPS CAULDRON, GREEN DRAGON SPRING, the GRAY LAKES, the BIG AND LITTLE ALCOVE SPRINGS and MEDUSA SPRING.

ELK PARK (Mileage 26.8) (Unnamed hot spring at left). This meadow is a favorite feeding ground of the AMERICAN ELK or WAPITI of which there are in the park about, 15,600. The elk is as tall as a horse, handsomely formed, has a dark mane and imposing antlers. Even the young of this species are stately; they "step about with the air of a game cock." It seems remarkable that antlers of such great size can be grown to maturity in a few months, to be lost and regrown each year. The Gibbon River is seen at the right (Mileage 27.2).

The highway continues slightly down grade along the Gibbon River in which at the right is seen DUCK ROCK (Mileage 28.0), a huge boulder balanced on a water-eroded pedestal which appears hardly strong enough to support the tremendous weight.

CHOCOLATE POTS (Mileage 28.2) are seen on both sides of the Gibbon River and a spouter under the water in the stream. These unique cone-shaped formations colored a reddish brown attract considerable attention.



MONUMENT GEYSER BASIN

26393

GIBBON MEADOW (Mileage 28.7) is a flat grassy valley bottom surrounded by low mountains. Through this valley winds the Gibbon River just before entering the Gibbon Canyon.

ARTISTS PAINTPOTS (Mileage 29.4) are reached by a trail leading to the left one-half mile distant at the foot of Paintpot Hill.

MONUMENT GEYSER BASIN near the top of the right knoll is at an elevation six hundred and fifty feet higher than the highway at this point. To reach this interesting geyser basin cross the footbridge over the Gibbon river at the right. (Mileage 29.8.) At this point a blazed trail leads up the slope to the Monument Geyser Basin,—one should allow one or two hours for this hike. In addition to several high bottle-shaped geyser cones some of which are inactive there are several fumaroles and large sulphur springs.

We now enter the GIBBON CANYON named for General John Gibbon who explored it in the early days. The canyon walls in places rise a thousand feet above the river.

BERYL SPRING (Mileage 30.4) is the largest boiling spring



GIBBON FALLS

FIELD EXHIBIT EXPLAINING FIREHOLE CANYON

FIELD EXHIBIT EXPLAINING TUFF CLIFF

MADISON CANYON FROM NATIONAL PARK MTN.

in Gibbon Canyon. Dense steam clouds from this fifteen foot cauldron frequently envelop the highway.

IRON SPRING (Mileage 33.4) is at left of highway.

GIBBON FALLS (Mileage 33.9) is viewed from above. The water tumbles in a foamy torrent down a steep cascade on one side and flows in a thin shiny ribbon on the other. It is difficult to realize when looking down on this waterfall that it is 84 feet high.

MESA TRAIL (Mileage 34.8) enters from left.

TUFF CLIFF EXHIBIT (Mileage 37.1) is at right of highway.

TERRACE SPRING (Mileage 38.0) is a very large lake of boiling water at a point where the highway makes an abrupt turn. All along the runways leading from this lake are deep brown colorings consisting of algae, the same low form of plant life that is responsible for the terrace colorings at Mammoth Hot Springs. The waters from this spring form a mixed calcareous and siliceous deposit.

MADISON JUNCTION (Mileage 39.0) (Symbol MJ) is 13.5 miles from the west entrance at West Yellowstone and 16 miles from Old Faithful (left hand road). At this point the Gibbon and Firehole rivers join to form the Madison River.

(For continuation of trip to Old Faithful turn to page 54).



GOVERNMENT MUSEUM AT MADISON JUNCTION

Tour From Western Entrance

(Via West Yellowstone, Montana)

WEST YELLOWSTONE STATION (Mileage begins at Arch) of the Union Pacific System and the city of West Yellowstone are just outside of the park at the western boundary. The railroad branch to this point was completed in 1907.

GALLATIN GATEWAY, MONTANA, the terminus of the Chicago, Milwaukee, St. Paul and Pacific Railway is 14 miles from Bozeman, Montana, on the Northern Pacific Railway and 85 miles from the Western Entrance. From Gallatin Gateway and West Yellowstone station the Yellowstone Park Company operates daily bus service to and from the park.

THE WESTERN ENTRANCE ARCH AND CHECKING STATION (Mileage 0.0) are beautifully situated in a lodgepole pine forest known as CHRISTMAS TREE PARK. The National Park Service rangers record all cars and motorcycles entering



WEST YELLOWSTONE STATION, UNION PACIFIC SYSTEM



MOUNT HAYNES IN MADISON CANYON

the park and issue season permits upon payment of the entrance fees prescribed by Congress.

DISTANCES FROM WESTERN ENTRANCE (WE) at West Yellowstone, Montana, to points outside of the park: Salt Lake City, Utah 380; Gallatin Gateway 84; Bozeman, Montana 98; Los Angeles, California 1119; New York City via East Entrance, A. Y. P. and Lincoln Highway 2536 miles.

—to points within the park: Madison Junction (MJ) 14; Old Faithful (OF) 30; West Thumb (WT) 49; Southern Entrance (SE) 72.0; Moran, Wyoming (Grand Teton National Park) 96; Lake Junction (LJ) 70; Cody, Wyoming 149; Canyon Junction (CJ) via Old Faithful 84; Tower Junction (TJ) via Old Faithful and Dunraven Pass 105; Mammoth Springs (MS) via Old Faithful and Lake 124; park round trip from Western Entrance (WE) 173.

PARK MILE-POST MARKINGS. The principal symbols are WE (Western Entrance), MJ (Madison Junction), OF (Old Faithful), WT (West Thumb of Yellowstone Lake), LJ (Lake Junction), CJ (Canyon Junction), TJ (Tower Falls Junction) and MS (Mammoth Hot Springs).



TROUT FROM THE MADISON RIVER

13089

FISH AND FISHING. In the Madison River and other waters in the vicinity of the West Entrance are the following varieties: Redthroat (Cutthroat, Blackspotted, Native) Trout, Scotch Lake (Loch Leven) Trout, European Brown (Brown, Von Behr) Trout, Lake (Mackinaw) Trout, Eastern Brook (Speckled) Trout, Rainbow and Steelhead Trout, Montana Grayling and Rocky Mountain Whitefish. One may fish the waters of Yellowstone National Park without a license but outside of the park boundary in Montana and Idaho one must have licenses. Tackle may be procured at the stores in West Yellowstone, at the Dude Ranches and at the stores in the park.

MOUNT HAYNES (Mileage 10.3) is a bold escarpment to the south rising to an elevation of 8,000 feet which was named for the late Frank Jay Haynes pioneer park photographer and stage line operator who was connected with the park for 40 years (1881 to 1920).



NATIONAL PARK MOUNTAIN AT MADISON JUNCTION

MADISON JUNCTION (Mileage 13.5) (Symbol MJ) is 39.0 miles from the northern entrance at Gardiner, Montana and 16 miles from Old Faithful (right hand road).

(For continuation of trip to Old Faithful set speedometer at Madison Junction at 39.0).

NATIONAL PARK MOUNTAIN (Mileage 39.0) at Madison Junction was named to commemorate the birth of the national park idea September 19, 1870 at this point in the camp of the Washburn-Langford Expedition.

MADISON JUNCTION MUSEUM (Mileage 39.0) faces down the Madison River. From this point National Park Mountain is at the left, Purple Mountain at the right and Mount Haynes in the distance ahead. This museum is operated by the National Park Service for the free use of park visitors; it was completed in the fall of 1929, and is devoted to history.

MADISON JUNCTION PUBLIC AUTOMOBILE CAMP at this point is considered one of the most beautiful sites in the region, but on account of its proximity to Old Faithful it is one of the smaller camps in point of patronage.

Saddle horse trail enters from left at (Mileage 39.1).

FIREHOLE RIVER (Mileage 39.3) at right. Enter Firehole Canyon.

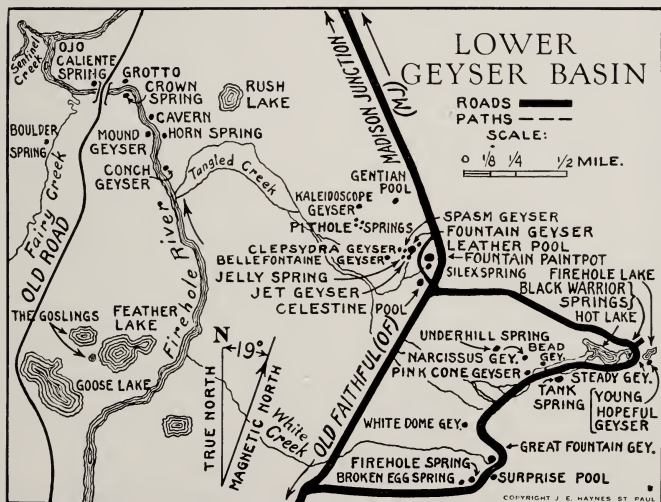
Immediately upon leaving Madison Junction the highway leads up the Firehole River through the FIREHOLE CANYON, one of the most beautiful drives on the Grand Loop Road which was completed in the fall of 1928 replacing a very crooked and steep stretch of road.

FIREHOLE FALLS (Mileage 40.4) at right. Geological exhibit at left.

FIREHOLE CASCADE (Mileage 41.3) is at the south end of the Firehole Canyon where a short halt is usually made.

NEZ PERCE CREEK (Mileage 45.1) made famous by the Nez Perce Indians headed by Chief Joseph on their memorable raid through the park in 1877.

We are approaching the LOWER GEYSER BASIN, a wide valley having an area of ten or twelve square miles in which Dr. F. V. Hayden in his official survey of the region catalogued 693 hot springs.





FOUNTAIN PAINTPOT

13009

LEATHER POOL (Mileage 46.8) is at right of the highway.

FOUNTAIN PAINTPOT (Mileage 46.8) is a boiling mud cauldron of tinted clay 40x60 feet in size flanked on two sides by a rim four or five feet high.

PHOTOGRAPHING. Do not attempt to photograph the Fountain Paintpot except in bright sunlight with the sun at your side (not at your back). Take movies at F16 and stills at 1/25 of a second at F16 without filter. Remember geysers and steam are best photographed with a side-lighting. The Paintpot does not require a filter but geyser pictures are improved by its use.

FOUNTAIN GEYSER which plays at irregular intervals to a height of 75 feet is one hundred yards west of the Fountain Paintpot and is reached by a footpath. Near the Fountain Geyser are several smaller vents. One called CLEPSYDRA GEYSER is worthy of notice.

SILEX SPRING (Mileage 46.9) is at left.

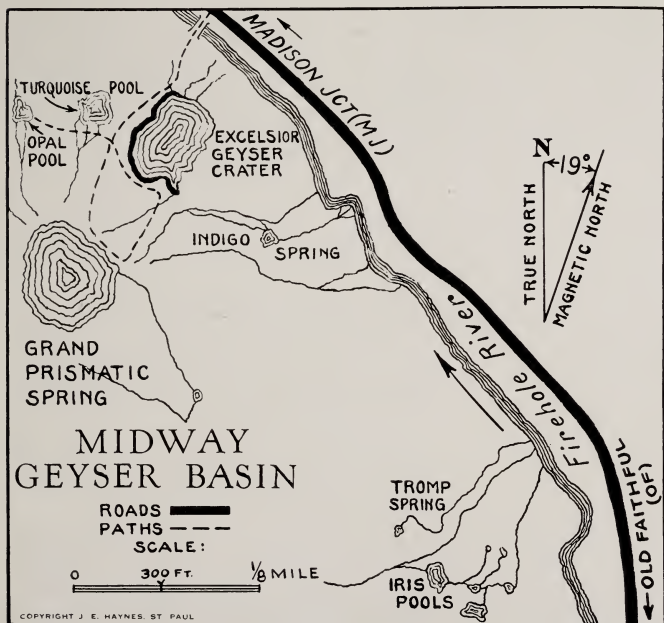
ROAD JUNCTION (Mileage 47.0). The main road turns

right. The left side-road leads to BLACK WARRIOR SPRINGS, STEADY GEYSER, FIREHOLE LAKE, GREAT FOUNTAIN GEYSER which plays 150 feet high for 45 to 60 minutes at intervals of eight to twelve hours, SURPRISE POOL and Firehole Spring. This side-road makes a loop of 3.3 miles and re-enters the main road about 1.1 miles beyond this junction.

WHITE DOME GEYSER (Mileage 47.3) is seen in left distance.

EXCELSIOR GEYSER CRATER OVERFLOW (Mileage 49.4) is seen enveloped in steam on the opposite side of the Firehole River.

MIDWAY GEYSER BASIN (Mileage 49.4) has a large parking area at the right of the highway. Cross the foot-bridge and see the GRAND PRISMATIC SPRING, one of the largest and





EXCELSIOR GEYSER, 300 FEET. CEASED TO PLAY IN 1890

10094

most beautiful hot springs in the entire park, INDIGO SPRING (at the right 100 yards), Excelsior Geyser Crater, Turquoise Pool and OPAL POOL.

EXCELSIOR GEYSER CRATER is a large pit formerly known as "Hells Half Acre." Superintendent Norris in 1881 named this geyser Excelsior on account of the tremendous eruptions which he witnessed that year. The water was thrown from 75 to 250 feet in height at irregular intervals. In 1888 the intervals varied from an hour to two hours. A column of water 200 feet in diameter was thrown into the air with each eruption. This geyser which ceased to play in 1890 is the greatest geyser on record in the park.

TURQUOISE POOL situated 150 feet north of Excelsior Geyser Crater is a silent pool about 100 feet in diameter which is remarkable for its beautiful, blue translucent water.

BISCUIT BASIN (Mileage 52.7) and JEWEL GEYSER are

on the west side of the Firehole River, and are reached by a footpath. **SAPPHIRE POOL** has a highly ornamented margin consisting of hundreds of small biscuit-like knobs of siliceous sinter, called geyserite.

JEWEL GEYSER erupts every three to five minutes to a height of 20 feet.

BLACK PEARL GEYSER is a little spouter that has a beautiful basin studded thickly with small black knobs each about a quarter of an inch in size. Its formation surrounds the roots and stump of a tree completely encrusting it with black pearls.

SILVER GLOBE SPRING derives its name from the large silvery bubbles of gas which are constantly rising to the surface of the hot water.

GEM POOL (Mileage 53.1) is the larger blue pool of a group of several at the right of the main highway at this point.

ARTEMISIA GEYSER (Mileage 53.2) is down the hill on the right side of the highway. Its crater is 60 feet across and is ornamented with geyserite of an olive green color. Eruptions occur at intervals of 24 to 30 hours to a height of 50 feet and last for ten to fifteen minutes.

MORNING GLORY POOL (Mileage 53.5) is at the right. The symmetrical shape and funnel-like crater filled to the brim with transparent blue water presents a spectacle when in the full sunlight long to be remembered. Unless the sun is shining brightly all of the beautiful pools of the Yellowstone are dimmed and lose most of their color. This pool is 23 feet in diameter and 29 feet deep in the center; its temperature at the surface is 170° F. Near the river are the **FAN** and **MORTAR** geysers. The latter erupts at irregular intervals 30 feet high, duration five minutes.

RIVERSIDE GEYSER (Mileage 53.6) is on the bank of the Firehole River. It erupts every six or seven hours obliquely across the river to a height of a hundred feet, the duration being fifteen minutes. This is one of the most spectacular geysers in the park and should be seen in eruption by every



MORNING GLORY POOL

16049

park visitor. For 20 to 30 minutes before each eruption the crater overflows so if you observe this be sure to wait for the eruption.

You are now in UPPER GEYSER BASIN the greatest geyser basin in the world. Within an area of two and a quarter square miles are 26 erupting geysers and more than 400 fumaroles and hot springs. The highest geyser, the Giant and the most famous geyser, Old Faithful are in this basin. Anyone who spends a day here may see the following geysers in eruption at least once and some of them several times, Old Faithful, Riverside, Daisy, Grotto, Lion and probably the Grand all of which are described within the next few pages.

At the right is CHAIN LAKE and at the left a large mineral spring, SPA GEYSER (Mileage 53.7).

Nearby is the ROCKET GEYSER (Mileage 53.7) which plays at irregular intervals 50 feet high; duration two to three minutes.

GROTTO GEYSER (Mileage 53.7) has a curious cone which

looks as though it had been formed around the roots of a large overturned tree. It plays 30 feet high at intervals of two to five hours. Eruptions last from a quarter of an hour to eight hours.

Road Junction (Mileage 53.8). From here may be observed at the left the large cone of the GIANT GEYSER, highest in the world which plays for an hour and a half about once a month to the amazing height of 250 feet. Three small





GIANT GEYSER



GROTTO GEYSER FORMATION

14029

geysers are on the same mound with the Giant; the **BIJOU**, **MASTIFF** and **CATFISH**.

Take right hand road that reenters the main highway again before reaching Old Faithful. This side road leads to the Daisy Geyser, Punchbowl Spring, Rainbow Pool, Emerald Pool and several other features.

DAISY GEYSER (Mileage 53.9) plays 70 feet high for three minutes every 80 to 90 minutes. Like the Riverside this geyser erupts obliquely. Near it are several other craters and the **WHITE PYRAMID GEYSER CONE**, an old geyser mound. Across the road from the Daisy is **BONITA POOL**. The other principal nearby features are **BRILLIANT POOL** and the **COMET GEYSER**.

PUNCHBOWL SPRING (Mileage 54.2) is on a mound five feet above the general level. This violently boiling hot spring ten feet in diameter has a glittering rim of colored formation about 18 inches high.

BLACK SAND POOL (Mileage 54.3) has a funnel about

30 feet in diameter bordered by a high bank of obsidian sand. From its west side flows a considerable stream of hot water forming a most beautiful channel which presents many colors of algal life.

SPOUTER GEYSER (Mileage 54.7) is a small geyser at the right of the road.

Footbridge (Mileage 54.7). A stop is made here to visit the large and important hot pools on the other side of Iron Creek. The first one is the large SUNSET LAKE at the right which presents various shades of color. Nearby is RAINBOW POOL and a few rods to the south is the famous EMERALD POOL which no one should fail to see. The small boiling crater by the footbridge is CLIFF GEYSER which at times plays several feet high. After returning across the footbridge it is only a short walk upstream to GREEN SPRING a large hot lake.

WHISTLE GEYSER (Mileage 54.8) is at the left of the road at this point. This is a most curious phenomenon. It performs only at great intervals but when the great rush of steam commences as it does several times each season a roar is produced which is audible for half a mile and lasts several minutes.

THREE SISTERS SPRINGS (Mileage 55.6) are at the right of the road. These amiable sisters never battle or roar.

Road Junction (Mileage 55.7) turn left to CASTLE GEYSER (Mileage 55.9) which by scientists is declared to be the oldest geyser formation in the park, was named in 1870 by the Washburn-Langford Party on account of its resemblance to the ruins of an old feudal castle. It plays at irregular intervals 75 feet high for a period of half an hour. Adjacent to the Castle Cone is TORTOISE SHELL SPRING and 100 feet north is CRESTED POOL a beautiful blue hot water basin 20 feet in diameter.

From here we return to the road junction (Mileage 55.8) and on to HAMILTON'S STORE at the right, to the swimming pool (Mileage 55.9) at the left, OLD FAITHFUL INN (Mileage 55.9) and Old Faithful Geyser (Mileage 56.0). South of Old

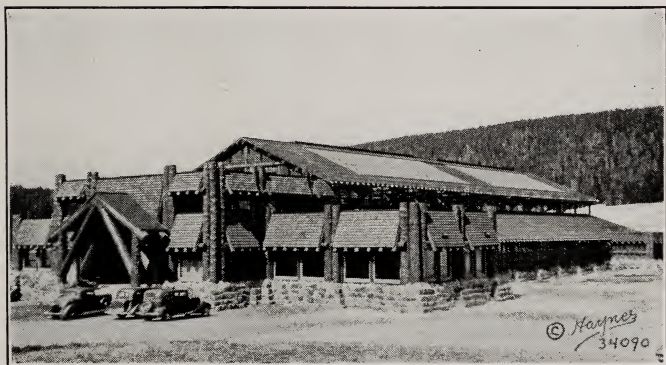


HAMILTON STORE AT OLD FAITHFUL

26496

Faithful Geyser is the OLD FAITHFUL PUBLIC AUTOMOBILE CAMP, HAYNES PICTURE SHOP, Cafeteria and the Old Faithful Museum and to the east is OLD FAITHFUL LODGE.

HAMILTON STORES at Old Faithful, two in number, are situated by the main highway before arriving at the Inn and in the Public Automobile Camp. At these stores curios and tourists' supplies in profusion are placed on sale.



SWIMMING POOL AT OLD FAITHFUL

34090

The New HAMILTON SWIMMING POOL (Mileage 55.9) at Old Faithful is the largest geyser water swimming pool in the world. It was completed during the summer of 1934. Twelve hundred trees were used in the log work. The pool for adults is 50x150 feet in size; the one for the kiddies is 20x50. The pool contains 280,000 gallons of water which comes from the Solitary Geyser and is changing constantly.

It contains 147 dressing rooms, and a front balcony with sand porches of washed sand taken from the shores of Yellowstone Lake.

OLD FAITHFUL INN (Mileage 55.9) is the most extensive log structure yet devised by man. It is a triumph in utilizing primitive material in construction. At night a powerful search light from the top of the Inn illuminates one of the eruptions of Old Faithful Geyser. It was originally built in 1904 but since that time has been greatly enlarged by the addition of two spacious wings.

OLD FAITHFUL GEYSER (Mileage 56.1) the most famous geyser in the world was named in 1870 by the Washburn-



OLD FAITHFUL INN AND GEYSER



OLD FAITHFUL GEYSER

Langford Party. It plays 150 feet high for four minutes at intervals varying from 60 to 80 minutes depending on the seasonal water supply. At each eruption about 15,000 gallons of water are ejected. As before mentioned an eruption of this geyser is illuminated every night by a giant searchlight.



MUSEUM AT OLD FAITHFUL

29029

OLD FAITHFUL MUSEUM (Mileage 56.1) which houses a most interesting collection of scientific exhibits was completed in the spring of 1929. It is operated by the National Park Service for the free use of park guests. The rangers and ranger naturalists are stationed here.

HAYNES PICTURE SHOP (Mileage 56.2) is situated at the entrance to the Automobile Camp. In addition to a complete line of park views, books, photographic supplies, including motion picture films and equipment, this company specializes in overnight photo finishing and has shops also in Old Faithful Inn and Old Faithful Lodge for the convenience of park guests.

OLD FAITHFUL LODGE with its hundreds of furnished cabins and large main buildings accommodates hundreds of guests. Evening entertainment here includes special programs and dancing in the large recreation hall.

There is so much to see and do at Upper Geyser Basin that one should stay several days. It is the greatest geyser basin in the world. The Castle Geyser is the oldest one in the entire basin. It dates back many thousands of years. There are many reasons why one should see the Yellowstone National Park leisurely.



OLD FAITHFUL LODGE

PHOTOGRAPHING. Most people make the sad mistake of attempting to photograph Old Faithful Geyser without getting far enough away to get the whole 150 foot eruption. The benches are much too close. Since the prevailing winds are from the west the steam is usually blown toward the Lodge so it is better to photograph Old Faithful from the opposite side. Be sure the sun is not behind you. Use a 2x filter in taking movies in bright sunlight at F8 to F11 and stills with a K1 filter 1/25th of a second at F11, or without a filter at F16. In photographing the Lodge and Inn remember that they are very dark colored and require a larger diaphragm opening than light colored buildings. Do not use a filter in photographing Morning Glory Pool or other close-ups, except the yellow buses and geysers taken from a distance. Remember bears are hard to photograph and are usually under-exposed, due to their dark color. By the aid of the ranger naturalists who keep track of the eruptions of the regular geysers you should be able to get photographs of not only Old Faithful Geyser in eruption but also the Riverside and Daisy geysers. Cones and craters that make good studies are Morning Glory



HAYNES PICTURE SHOP, OLD FAITHFUL

Pool, the Grotto Formation, Giant Geyser Cone, Punch Bowl Spring, Emerald Pool, Castle Geyser Cone, Crested Pool, Sponge Geyser and the cones of the Lion Geyser group. Old Faithful cannot be photographed successfully by searchlight even with the fastest lens and film.

GEYSER HILL across the Firehole River is reached by a footpath. During the day ranger naturalists conduct parties to the interesting geysers and springs here situated. The four foot cone is the crater of the BEEHIVE GEYSER which plays 200 feet high for 15 minutes at irregular intervals usually following activity of the Giantess Geyser situated further up on Geyser Hill. Near the river bank is CASCADE GEYSER which has become a quiescent hot spring. At the river's edge is SPUTTERER SPRING which discharges boiling water into the Firehole. On the opposite bank of the river is CHINAMAN SPRING. A chinaman is said to have once put a tent over this natural washtub to start a laundry but when the soap was dissolved in the water the spring erupted with great violence and the chinaman fled. "Soaping of geysers" sometimes produces violent eruptions which destroy the for-

mation so this practice has been prohibited for many years. We next come to the GIANTESS GEYSER which occupies the most prominent position on Geyser Hill. Its eruptions attain the height of 150 to 200 feet, the explosions being so violent that earth tremors so generated may be felt as far as Old Faithful Geyser. The duration of eruptions varies from 12 to 36 hours and occurs at intervals of 10 to 20 days. Turning westward we pass THE TEAKETTLE, THE VAULT, PUMP, TOPAZ SPRING, SPONGE GEYSER, DOUBLET POOL, and BEACH SPRING and arrive at the Lion group of four craters. The LION GEYSER plays 60 feet high for two to four minutes several times each day. The LIONESS GEYSER seldom plays but when in action the eruptions attain a height of 100 feet and last 10 minutes. The BIG CUB and the LITTLE CUB have peculiar habits. The big one plays at the same time as the Giantess and to a height of 60 feet while the little one plays every one to two hours but only three to ten feet in height.



OBLONG GEYSER CRATER

The Castle Geyser which you have already seen stands out prominently in the west. We shall now visit a group of interesting geysers on the same side of the Firehole River as we are now standing and down-stream about 500 yards. Before reaching the footbridge which leads to the Castle Cone we come to LIBERTY POOL and near the footbridge is CHIMNEY CONE; without crossing the bridge we come next to the SAWMILL GEYSER which plays 35 feet high at frequent intervals. Small geyser eggs will be observed in the small pools around the main crater. A short distance to the right is the SPASMODIC GEYSER which plays only four feet high but for long periods varying from 20 minutes to an hour. The BULGER SPRING is seen just before we arrive at the GRAND GEYSER, one of the most important geysers in the entire region. It plays in a series of eruptions each attaining a height of 200 feet and lasting from 15 to 30 minutes; displays occur about twice in 24 hours. The Grand Geyser plays from a low crater just south of the crater of the TURBAN GEYSER which also plays at the same time as the Grand but to a height of only 40 feet. Its eruptions sometimes last three hours. Continuing in the general direction of the Giant Geyser Cone we next pass the WAVE SPRING appropriately named for the gentle pulsations which disturb the surface of the pool. Next we come to BEAUTY POOL and the aptly named CHROMATIC POOL which is one of the most beautiful in the Upper Basin. On the opposite bank of the Firehole River just across the footbridge is INKWELL SPRING and a few feet to the right the beautiful crater of the OBLONG GEYSER, which plays every eight to fifteen hours to a height of 20 to 40 feet, eruptions lasting seven minutes. We have now visited all of the most important hot springs and geysers in the Old Faithful region which is proclaimed by world travelers to be the greatest area of its kind anywhere to be found. Remember that while you are here you should see not only Old Faithful Geyser but the Lion, the Grand, the Riverside, and the Daisy and if you are very lucky you may see the Castle or the Giant or Giantess.

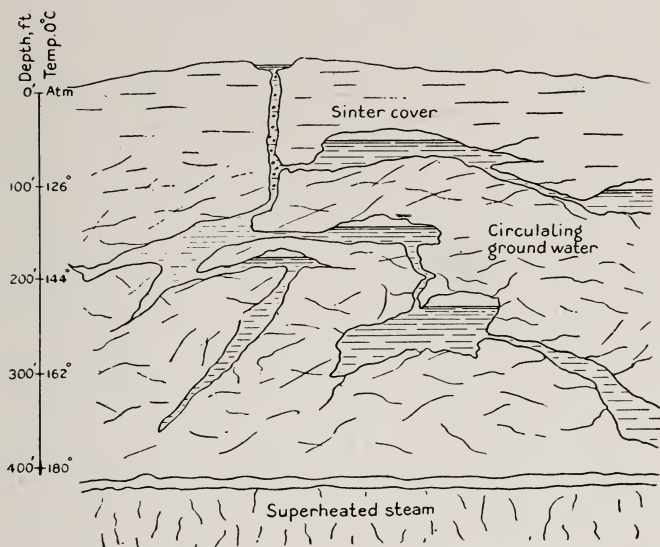


DIAGRAM SHOWING SOME OF THE ESSENTIAL PARTS OF A GEYSER. REPRODUCED FROM "HOT SPRINGS OF THE YELLOWSTONE NATIONAL PARK", ALLEN AND DAY

NUMBER OF GEYSERS IN YELLOWSTONE NATIONAL PARK

According to "Hot Springs of the Yellowstone National Park" page 176 by Allen and Day, there are at least two hundred active geysers in the park distributed as follows:

Crater Hills	1
Geyser Creek Geyser Basin	5
Heart Lake Geyser Basin	20
Lone Star	1
Lower Geyser Basin	42
Mary Mountain	1
Midway Geyser Basin	3
Norris Geyser Basin	34
Shoshone Geyser Basin	14
Upper Geyser Basin	70
West Thumb Geyser Basin	9
Total	200

The areas mentioned which are on or near the Grand Loop Road of the park are Norris Geyser Basin, Geyser Creek Geyser Basin situated east of Paintpot Hill near Gibbon Meadow, Lower Geyser Basin, Midway Geyser Basin, Upper Geyser Basin (Old Faithful), Lone Star on a short side road about four miles from Old Faithful on the Old Faithful-West Thumb highway, West Thumb Geyser Basin, and Crater Hills about a mile west of the Lake-Canyon highway in Hayden Valley. The other areas may be reached only by horse trails. They are Mary Mountain ten miles east of Lower Geyser Basin, Shoshone Geyser Basin about eight miles south of Old Faithful, and Heart Lake Geyser Basin about six miles southeast of Lewis Lake. There are many other hot springs regions in the park, but the only geyser regions listed by Allen and Day are the eleven before mentioned.

Out of the two hundred geysers listed, all but thirty-five are within walking distance of the Grand Loop Road.

DISTANCES FROM OLD FAITHFUL (OF) to West Yellowstone 30; to Mammoth Springs (MS) 51; to Moran, Wyoming and Grand Teton National Park 66; to Cody, Wyoming via Lake 119; to Mammoth Springs (MS) via Lake, Canyon and Dunraven Pass 94 miles.

HORSEBACK TRIPS FROM OLD FAITHFUL. Seven mile trip to Lone Star Geyser. Eighteen mile round trip via Lone Star Geyser to Shoshone Geyser Basin at Shoshone Lake. Eight mile round trip to Mallard Lake.

The road to West Thumb is a one-way road. Travel goes eastward only.

(Re-set speedometer at Old Faithful Geyser Cone at 56.1). Leaving Upper Geyser Basin the road crosses the Firehole River (Mileage 56.6) and leads to the platform at Kepler Cascade (Mileage 57.8) which is nearly 150 feet high, one of the most attractive water falls in the region.

Road Junction (Mileage 59.4). Right side road leads to Lone Star Geyser (Mileage 60.2). It erupts every three

hours to a height of 50 feet, duration 10 minutes. Returning to the main road (Re-set speedometer to Mileage 59.4).

Turn right on main highway across bridge over the Firehole River.

NORRIS PASS (Mileage 63.9) is at the right of the road. This was named for former Superintendent P. W. Norris.

ISA LAKE (Mileage 64.3) is on the top of the first crossing of the Continental Divide at an elevation of 8,262 feet. Its water flows into both the Pacific and Atlantic Oceans. CRAIG PASS (Mileage 64.3) is at this point.

HERRON CREEK (Mileage 65.3) is crossed part way down the grade to DeLacy Creek.

DELACY CREEK (Mileage 65.6) from which the second ascent is made to—

SHOSHONE POINT (Mileage 66.3). From here Shoshone Lake is seen at the south and in the distance the peaks of the Teton range, the highest of which, the Grand Teton is 13,747 feet.

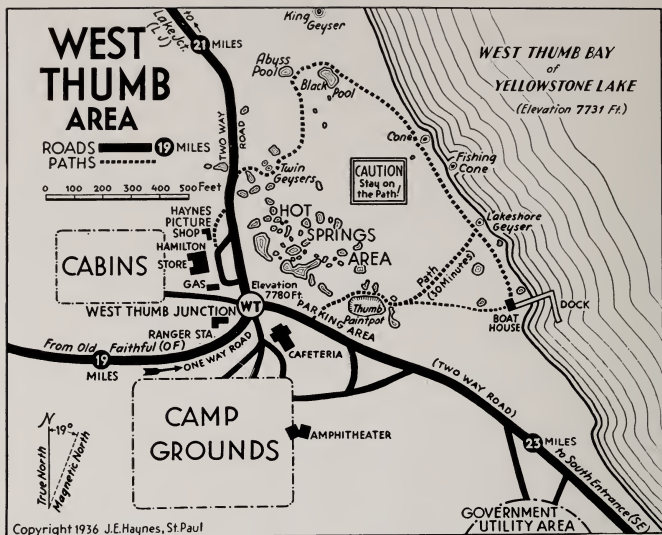
THE CONTINENTAL DIVIDE (Mileage 71.0) is crossed the second time at an altitude of 8,366 feet.

LAKE VIEW (Mileage 73.7) affords the first glimpse of Yellowstone Lake which is 26 miles long and is the largest lake in North America at its elevation, 7,731 feet. Recent soundings disclose a maximum depth of 330 feet, near the center of West Thumb Bay. Beyond the lake are seen the ABSAROKA MOUNTAINS which on account of their precipitous sides are practically impassable.

DUCK LAKE (Mileage 74.0) is seen at left.

WEST THUMB OF YELLOWSTONE LAKE (Mileage 74.7). Here are situated a large PUBLIC AUTOMOBILE CAMP, CAFETERIA, HAMILTON STORE, GAS STATION, the RANGER STATION and HAYNES PICTURE SHOP.

Nearby is a large paintpot, the FISHING CONE, LAKE SHORE GEYSER and several other interesting features, including many hot pools of brilliant color.



WEST THUMB JUNCTION (Mileage 74.7). The highway to the right goes to the southern boundary, 23.0 miles distance, and to Moran, Wyoming, 25.5 miles south of the south boundary. Moran is opposite the Grand Teton National Park. Left highway skirts the shore of the lake to Yellowstone Lake outlet, where the road from Cody, Wyoming, joins the Grand Loop Road, and to the Grand Canyon.

WEST THUMB AREA is one of the most recently developed centers in the park. The principal thermal attractions here are the **THUMB PAINTPOT**, **LAKESHORE GEYSER**, **FISHING CONE**, **BLACK POOL**, **KING GEYSER**, **OCCASIONAL GEYSER**, **ABYSS POOL**, **TWIN GEYSERS**, and an assortment of hot and warm springs, reached by a footpath. (See map.)

(For continuation of the tour to the Lake and Canyon turn to page 80.)

Tour From the Southern Entrance

(Via Moran, Wyoming)

Important mileages from LANDER, WYOMING, on the Chicago & North Western Railroad follow:

LANDER (Mileage 0.0); FORT WASHAKIE (Mileage 17.1); DUBOIS (Mileage 83.5); BROOKS LAKE, TOGWOTEE INN (Mileage 108.5); TOGWOTEE PASS, CONTINENTAL DIVIDE (Mileage 116.5); Road Junction (Mileage 152.9) left road to MORAN, WYOMING (Mileage 153.8); right road to JACKSON LAKE LODGE, (Mileage 153.5); SOUTHERN ENTRANCE (Mileage 178.4) Symbol (SE).

DISTANCES FROM SOUTHERN ENTRANCE (SE) to points outside of the park: Denver, Colorado 618; Salt Lake City, Utah 408; Los Angeles, California 1147; New York City via Eastern Entrance, A. Y. P. and Lincoln Highway 2512; Moran, Wyoming and Grand Teton National Park 25.2 miles.

—to points within the park: West Thumb (WT) 23; Lake Junction (LJ) 44.0; Cody, Wyoming 123; Canyon Junction (CJ) 58.3; Tower Junction (TJ) via Dunraven Pass 79; Mammoth Springs (MS) 98; Western Entrance



THE GRAND TETON, 13,747 FEET



TETON RANGE FROM JACKSON LAKE

(WE) via Canyon and Mammoth 148.6; park round trip from Southern Entrance (SE) 193.6 miles.

PARK MILE-POST MARKINGS. The principal symbols are SE (Southern Entrance), WT (West Thumb of Yellowstone Lake), LJ (Lake Junction), CJ (Canyon Junction), TJ (Tower Falls Junction), CE (Cooke Entrance), MS (Mammoth Hot Springs), MJ (Madison Junction) and OF (Old Faithful).

GRAND TETON NATIONAL PARK about 50 miles south of the West Thumb was established by Act of Congress signed by President Calvin Coolidge on February 26, 1929. It embraces the Teton Mountain Range including the **GRAND TETON**, elevation 13,747 feet, **MT. OWEN**, 12,910 feet, **MIDDLE TETON**, 12,700 feet, **SOUTH TETON**, 12,500 feet, **MT. TEEWINOT**, 12,100 feet, **MT. MORAN**, 12,100 feet, **MT. ST. JOHN**, 11,400 feet, and several other peaks; also **JENNY LAKE**, **LEIGH LAKE**, **BEAVER DICK LAKE** and most of **PHELPS LAKE** at the south.

FISH AND FISHING. In the Snake River and the other streams and lakes in the vicinity of the Southern Entrance of the park are the following varieties: Redthroat (Cutthroat, Blackspotted, Native) Trout, Scotch Lake (Loch Leven) Trout, European Brown (Brown, Von Behr) Trout, Eastern Brook (Speckled) Trout, Rainbow and Steelhead Trout, Rocky Mountain Whitefish and Land Locked Salmon. One may fish the waters of Yellowstone National Park without a license but outside of the park boundary in Wyoming one must have a license. Tackle may be procured at the stores in the neighboring towns, at the Dude Ranches, at Moran, Jackson Lake Lodge and at the stores in the park.

LEWIS FALLS (Mileage 188.8) and **LEWIS LAKE** (Mileage 190.0) were named for Captain Lewis of the Lewis and Clark Expedition. The **CONTINENTAL DIVIDE** (Mileage 197.6) is crossed on the way to **West Thumb** (Mileage 202.0).

(Re-set speedometer at West Thumb to 74.7).

PHOTOGRAPHING. Thermal phenomena here that are good subjects for the photographer are the Paintpot which requires bright sunlight; take stills at 1/25th of a second without filter at F16, and movies without filter at F16; take stills of the Fishing Cone at 1/25th of a second with filter at F16 or without at F32 and movies with filter at F11 or without filter at F16 in bright sunlight. If you are fortunate you may see the Lakeshore Geyser.

The highway from Old Faithful to West Thumb is a one-way road and may not be traveled in the westerly direction from West Thumb to Old Faithful.

YELLOWSTONE LAKE (Mileage 74.7) has a shore line of 100 miles, an area of 139 square miles, and is 26 miles across. Its elevation is 7,731 feet. Along the shores of this beautiful lake abound the native or Cutthroat trout. No fishing license is required in the park. All fish hooked less than 7 inches long shall be carefully handled with moist hands and returned at once to the water if not seriously injured. Five fish per person fishing constitute the limit for a day's catch, at Lake and Fishing Bridge.

Across Yellowstone Lake from the West Thumb Bay are seen the Absaroka Mountains which extend completely along the east shore.

FREE CAMP GROUNDS and the THUMB AMPHITHEATRE are just south of the junction. The CAFETERIA, HAMILTON STORE, GAS STATION, RANGER STATION and HAYNES PICTURE SHOP are nearby for the service of park guests. A large cabin group is west of the ranger station. Small boats are available for fishing trips.

From the West Thumb the highway leads to the outlet of Yellowstone Lake. The new highway along the lake shore was completed in 1926. By the roadside are frequently seen large tree trunks from which patches or encircling bands have been removed. This is the work of PORCUPINES which may be seen at a few places in the park. It is known that the Porcupine has caused the death of more than one mountain lion and lynx by means of its quills; any animal attempting to bite the porcupine gets its mouth filled with spines, which prevent its eating, causing death by starvation. It has been stated that the quills are thrown by the porcupines; this, however, is not the fact. When attacked he huddles into a ball completely covered with quills and strikes his adversary with his tail, at the same time lodging in him many painful spines.

Of the small furred animals in the park, there are otter, mink, weasel, marten, skunk, badger and wolverine. The OTTER, being fond of water and living chiefly on fish, makes its home usually under the roots of a large tree overhanging the banks of a stream. It has webbed hind feet and a thick round tail for use in swimming. The fur of the otter is very fine and of a dark brown color. The MINK haunts the margins of streams and rivers and is less aquatic than the otter. It preys on small animals and fish when it can procure them, but lives chiefly on birds; it is smaller than the otter, and its fur is yellowish or dark brown. The COMMON WEASEL, or ERMINE, is a small, long-bodied animal with



TROUT FISHING NEAR STEVENSON ISLAND

short legs, the smallest member of the marten family. It kills grouse, ducks, rabbits and other animals, some ten times its own size, and is considered the most vicious of all animals. In summer its coat is brown, but white in winter, a striking manifestation of Nature's plan of protection. The MARTEN lives on small rodents, birds and eggs, and spends so much time in the trees that it is often called the PINE MARTEN. Its habitat is on rugged and rocky forest-covered mountains, seldom in open country. The WOLVERINE is a heavily built carnivorous animal like a diminutive bear in appearance, but with a short distinct tail. It is one of the rarest animals in the Park. The BADGER has a broad, flat back, and like the weasel, has very short legs and is very savage. It may, when at a distance, be distinguished from the woodchuck by its black and white striped face. It lives in burrows and feeds on squirrels and other rodents of every description.

PUMICE POINT (Mileage 83.2). DOT ISLAND is to the east, and FRANK ISLAND in the distance.



(Top) U. S. BUREAU OF FISHERIES, LAKE HATCHERY
LAKE HOTEL

FISH HATCHERY (Mileage 93.6). This is maintained by the United States Bureau of Fisheries of the Department of Commerce, and is the largest game fish hatchery in the world. Visitors are taken through here daily.

LAKE HOTEL (Mileage 93.8), of Colonial architecture is one of the hotels operated by the Yellowstone Park Company. Speedboats and fishing boats and equipment are available at the dock in front of the hotel.

BEARS. Noblest among our wild animals is the GRIZZLY BEAR, known also as the SILVERTIP. Misunderstood for many years, his aggressiveness greatly overrated, we now know him



GRIZZLY BEARS

29357

as a marvelously sagacious wild thing, crafty in hiding, loving concealment. Reports of his attacking man unprovoked are usually very difficult of proof. His great strength and agility make him the most formidable of antagonists when aroused. He is not a tree-climbing bear, but uses his long claws for digging out small animals and roots. He is omnivorous, but the Grizzly of the Yellowstone region has a marked tendency to relish meat in preference to other food, because of the abundance of game in this district. As an actual killer of large game and of cattle he rarely plays an active part. The Grizzly will not often be met by the tourist except about a few of the feeding grounds at twilight. There he is not afraid of the scent of man. Molesting or teasing the bears is prohibited. These bears are powerful and timid wild animals, and exceedingly nervous, and any unusual movement alarms them and they may strike or bite. They resent any form of teasing such as withholding food. It is unfair to the bears

to feed them by hand, for bears that bite many tourists must be shot and no one is to blame but the tourists. Do not allow children to go near the bears.



(Top) SPEEDBOAT ON YELLOWSTONE LAKE
FISHING NEAR THE LAKE OUTLET



HAMILTON LAKE STORE

THE HAMILTON STORE and U. S. POSTAL STATION (Mileage 94.0) which overlooks Yellowstone Lake was completed in 1922. A full assortment of curios and tourist supplies are available here. Nearby is the gas station.

LAKE RANGER STATION (Mileage 94.1) is the headquarters for the rangers and ranger-naturalists stationed at this point.

LAKE PUBLIC AUTOMOBILE CAMP (Mileage 94.6) is in the woods back of the ranger station and store. It is one of the smaller camps, the larger one being at FISHING BRIDGE (Mileage 95.5).

LAKE LODGE (Mileage 94.1) overlooks the Yellowstone River and the lake outlet and in the distant Absaroka Mountains is seen the SLEEPING GIANT.

PHOTOGRAPHING. Pictures of Lake Hotel and the Lake and mountains as well as fishing scenes on the lake and vistas taken from the speedboats are usually over-exposed. To correct this either use a filter or shorten the exposure in taking both movies and stills. Pictures of Lake Lodge on the other



AN HOUR'S CATCH AT STEVENSON ISLAND

hand are usually under-exposed. The best pictures of the Sleeping Giant are taken with a telephoto lens and ray filter. Remember that bears are very dark colored and pictures of them are usually under-exposed.

LAKE JUNCTION (Mileage 95.3) (Symbol LJ) is the junction of the road entering from the right from Cody, Wyoming, 82.2 miles distant, with the Grand Loop Road. Right road goes to—

FISHING BRIDGE (Mileage 95.5) over the Yellowstone River is the favorite fishing place for hundreds of anglers, most of whom are amply rewarded for their efforts.

FISH AND FISHING. Redthroat (Cutthroat, Blackspotted, Native) Trout inhabit the waters of Yellowstone Lake and the Yellowstone River between the lake and Grand Canyon, there being practically no other variety in the vicinity.

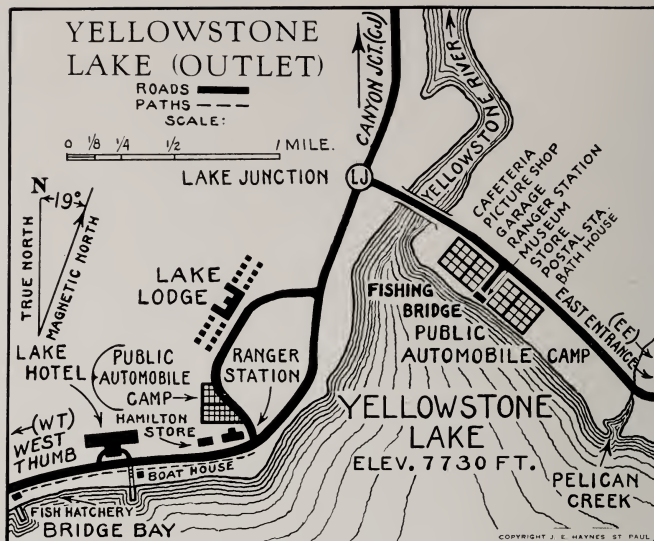
DISTANCES FROM LAKE JUNCTION (LJ) to East Entrance (EE) 26; to Cody, Wyoming 79; to Moran, Wyoming and Grand Teton National Park via West Thumb (WT) 68; Canyon Junction (CJ) 14; Tower Junction (TJ) via Dun-

raven Pass 35; Mammoth Springs (MS) via Canyon and Tower Junction (TJ) 54 miles.

FISHING BRIDGE PUBLIC AUTOMOBILE CAMP (Mileage 95.7) at which are the following services operated by the various park companies: HOUSEKEEPING CABINS, HAYNES PICTURE SHOP which carries a full line of park views, books, photographic supplies and specializes in overnight photo finishing, CAFETERIA, FUEL YARD where bundles of split wood of convenient size are available, BATHHOUSE, GARAGE, GAS



(Top) LAKE MUSEUM AT FISHING BRIDGE CAMP
YELLOWSTONE LAKE FROM LAKE MUSEUM



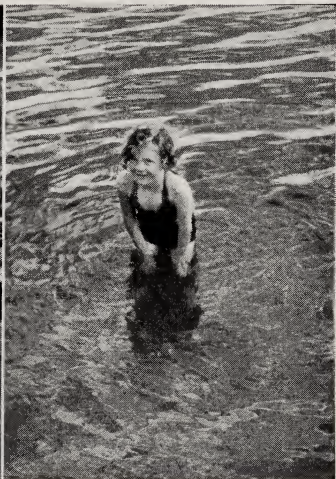
STATION and HAMILTON STORE which carries a full line of curios and tourist supplies. This is the second largest automobile camp in the park, the one at Old Faithful being the largest, and is a desirable place to spend many days, boating, fishing, and hiking. (See map.)

This camp ground has been improved greatly during the past few seasons. In 1936 construction of the new Fishing Bridge over the Yellowstone River replacing the original bridge was begun, many new tourist cabins were built by the Yellowstone Park Company and the campsites area was enlarged. Every visitor should see the Lake Museum and its interesting exhibits and attend the ranger naturalists' lectures.

(For continuation of trip to Grand Canyon turn to the middle of page 94.)



HAYNES PICTURE SHOP, FISHING BRIDGE CAMP GROUND



IN FISHING BRIDGE CAMP
"THE WATER'S FINE"

Tour From The Eastern Entrance

Via Cody, Wyoming

CODY, WYOMING (Mileage 0.0) was named for Colonel William F. Cody affectionately known as Buffalo Bill. Recently a splendid statue of Buffalo Bill has been erected here. Set speedometer at 0.5 at Shoshone River Bridge. Cody is the terminus of the Burlington Route which company operates the Burlington Cody Inn here for the convenience of its patrons. Cody is 55.2 miles east of the Eastern Entrance of the park. Buses of the Yellowstone Park Company operate daily to and from the park in connection with the railroad.

SHOSHONE DAM (Mileage 7.6) is a tremendous structure 200 feet wide and 328 feet in height. At the top it is 10 feet thick and its base though only 80 feet long is 108 feet in thickness. It impounds the waters of the Shoshone River for the benefit of farm land over a vast area.

MORRIS RANCH (Mileage 18.4) at the left of the highway is a typical western dude ranch operated by Frederick Morris a typical genial westerner.

SHOSHONE NATIONAL FOREST (Mileage 26.7) is entered at this point.

At OVERHANGING ROCK CLIFF (Mileage 28.5) is a striking piece of engineering work where the highway is carved out of the cliff above the river.

GOOSE (Mileage 29.0) is seen in cliff at right.

HOLY CITY (Mileage 29.2) with its many spires surmounting the cliff is seen at the right while at the left are the WOODEN SHOE and PTARMIGAN MOUNTAIN.

THORS ANVIL (Mileage 29.8) and the THOUSAND FOOT CLIFF (Mileage 30.6) are next passed.

THE PALISADES (Mileage 41.1) and the ELEPHANT HEAD at right (Mileage 42.6), and the MUTILATED HAND are seen in the right distance.

CHIMNEY ROCK (Mileage 43.2) is passed shortly before HOLM LODGE (Mileage 45.8) is reached.

PAHASKA TEPEE LODGE (Mileage 52.9) was originally a hunting lodge owned by Colonel Cody. Its patrons now for meals and lodgings are principally motorists who have replaced the picturesque hunters of early days. Manager Wilkinson also operates a garage and gas station.



(Top) THE HOLY CITY, CODY HIGHWAY
SYLVAN LAKE AND TOP NOTCH MOUNTAIN



EASTERN ENTRANCE GATEWAY

27033

EASTERN ENTRANCE (Mileage 55.2), is 27 miles from the Grand Loop Road at Lake Junction. Here is situated the Government checking station where rangers record all automobiles and motorcycles entering the park, collect the entrance fees prescribed by Congress, and issue season permits.

DISTANCES FROM EASTERN ENTRANCE (EE) to points outside of the park: Cody, Wyoming 53; Cheyenne, Wyoming 543; Denver, Colorado 651; New York City 2445; Los Angeles, California via Western Entrance 1199 miles.

—to points within the park: Lake Junction (LJ) 26; Moran, Wyoming (Grand Teton National Park) via West Thumb (WT) 94; Canyon Junction (CJ) 40; Tower Junction (TJ) via Dunraven Pass 61; Mammoth Springs (MS) 80; Madison Junction (MJ) 115; Western Entrance (WE) 129; Old Faithful (OF) 131; West Thumb (WT) via Mammoth Springs 150; park round trip from Eastern Entrance (EE) 197.

PARK MILE-POST MARKINGS. The principal symbols are EE (Eastern Entrance), LJ (Lake Junction), CJ (Canyon

Junction), TJ (Tower Falls Junction), MS (Mammoth Hot Springs), MJ (Madison Junction), OF (Old Faithful) and WT (West Thumb of Yellowstone Lake).

FISH AND FISHING. In the Shoshone River and other waters in the vicinity of the Eastern Entrance to the park are the following varieties: Redthroat (Cutthroat, Black-spotted, Native) Trout, Eastern Brook (Speckled) Trout, Rainbow Trout, Rocky Mountain Whitefish, Bass, Crappies and Suckers. One may fish the waters of Yellowstone National Park without a license but outside of the park boundary in Wyoming one must have a license. Fishing tackle may be procured at the stores in Cody, at the Dude Ranches and at Pahaska Tepee Lodge, and at the stores in the park.

SYLVAN PASS (Mileage 62.9) is crossed at an elevation of 8,559 feet. **LAKE ELEANOR** (Mileage 63.6) and **SYLVAN LAKE** (Mileage 65.2) are the next features of interest. Southeast of Sylvan Lake is seen **TOP NOTCH PEAK** which rises to an elevation of 10,000 feet.

TETON POINT (Mileage 71.3) affords a splendid view of the distant Teton Mountains on days when the visibility is good, and the broad expanse of Yellowstone Lake in the foreground.

FISHING BRIDGE PUBLIC AUTOMOBILE CAMP (Mileage 81.8) at which are the following services operated by the various park companies: **HOUSEKEEPING CABINS**, **HAYNES PICTURE SHOP** which carries a full line of park views, books, photographic supplies and specializes in overnight photo finishing, **CAFETERIA**, **FUEL YARD**, **BATH HOUSE**, **GARAGE**, **GAS STATION** and **HAMILTON STORE** which carries a full line of curios and tourist supplies. This is the second largest automobile camp in the park, the one at Old Faithful being the largest, and is a desirable place to spend many days, boating, fishing, and hiking.

LAKE MUSEUM, situated near the lake shore, is well worth visiting. Here are innumerable interesting exhibits pertaining to the lake region; and nearby is the outdoor



COLTER PEAK, YELLOWSTONE LAKE

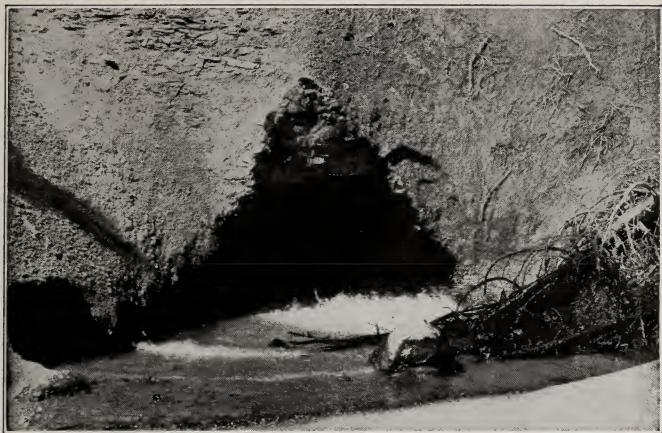
stadium where visitors gather to hear talks about the park by the government ranger naturalists.

FISHING BRIDGE (Mileage 82.0) over the Yellowstone river is the favorite fishing place for hundreds of anglers, most of whom are amply rewarded for their efforts. The fish caught here are the native trout also known as Cutthroat and Redthroat trout.

LAKE JUNCTION (Mileage 82.2) (At this point change speedometer to 95.3, and turn right to Grand Canyon.)

YELLOWSTONE RIVER (Mileage 97.3) is seen at right. The highway to Canyon follows it all the way.

MUD VOLCANO (Mileage 100.8, the speedometer having turned at 100 miles) is a large cauldron on the mountain side with a funnel shaped crater 30 feet deep which is partly filled with a lead colored mass of mud in violent agitation. Nearby is the **DRAGONS MOUTH SPRING** a green stone gable over a violently pulsating hot spring. The other springs in this geyser basin are muddy or cloudy but the waters of the Dragons Mouth are remarkably clear.



DRAGONS MOUTH SPRING

22637

PHOTOGRAPHING. The Mud Volcano may be photographed from the road in bright sunlight making stills without filter at $1/25$ th of a second at F16 and movies without filter at F16. Closeups of the crater and of the Dragons Mouth Spring nearby are made as follows, with good sunlight, stills $1/25$ th of a second at F11 and movies at F11, using no filter in either case. Remember that the filters are particularly advantageous in photographing geysers and steam columns against the sky, in making distant vistas of mountains and in photographing the yellow buses.

HAYDEN VALLEY (Mileage 101.5), named for Dr. F. V. Hayden who was in charge of the first geological surveys of the park, is the favorite range at certain seasons, of the elk.

ELK ANTLER CREEK (Mileage 102.7) is crossed.

NORTHERN PACIFIC RAILWAY MONAD TRADEMARK (Mileage 102.9) is outlined in the meandering of Trout Creek. This ancient Chinese symbol was adopted as the symbol of the first railway to be built to the park boundary.

Mt. Washburn is seen in distance ahead, at (Mileage 103.9).



GRIZZLY BEARS

27367

The GRIZZLY BEAR show at Otter Creek (Mileage 108.0) reached by a short sideroad, is one of the greatest of its kind, and is seen toward evening when the bears come from their native haunts to get their evening meal.

The AMERICAN BLACK BEAR exists in Yellowstone Park in a number of color phases. The commonest type is black with a brown nose and the animal usually sports a white chest patch. Then there are dark brown and medium brown, reddish brown and dull buffy brown individuals. These dull buffy animals are known as "cinnamon" bears. The Black Bear has low shoulders and in the latter end of summer he shows a great tendency to roly-poly fatness. He is a daylight patron of the feeding grounds where he remains for a short time eating rather daintily and then silently departs. His claws are short and he climbs trees like a cat and then lolls about in the branches like a lazy boy. The trees seem to be his only summer home. His manners are fascinating, but he often shows himself a very scrappy, quarrelsome animal.



GRAND CANYON FROM ARTIST POINT

28328

CHITTENDEN BRIDGE (Mileage 108.4) which replaced Uncle Toms ferry across the Yellowstone River is the longest Milan arch bridge in the world. The highway crossing this bridge leads to the GRAND CANYON LODGE (Mileage 109.0), near which is UNCLE TOMS TRAIL to the bottom of the Grand Canyon, and to Artist Point. The GRAND CANYON LODGE (Mileage 109.0) is one of the largest lodge cities in the park. From here many hikes and horseback rides afford diversity for guests. Trails lead to the foot of the Upper Falls and the Great Falls and to the brink of the Great Falls. Another trail leads along the rim of the Canyon to Artist Point and to Point Sublime.

ARTIST POINT (Mileage 110.0) affords perhaps the most impressive view of the Grand Canyon of the Yellowstone. From the platform one sees the 308 foot Great Falls, Uncle Toms Trail winding downward from the canyon rim 1200 feet to the foot of the fall, ospreys' nests on rock spires, and across the canyon some wild animal trails and the platforms at Point Lookout, Grand View, and Inspiration Point. This



(Top) A CAMP NEAR CHITTENDEN BRIDGE
UNCLE TOMS TRAIL, GRAND CANYON



(Left) WHILE THE MEN FOLKS FISH
(Right) UPPER FALL OF THE YELLOWSTONE

gorge is cut through igneous rock which has weathered and crumbled and has taken on many beautiful colorings. The yellows which predominate are responsible for the name of the park. POINT SUBLIME, three-quarters of a mile beyond Artist Point is reached by a foot trail.

HORSEBACK TRIPS FROM CANYON LODGE. Ten mile round trip to Sulphur Mountain. Four mile round trip to Artist Point and Point Sublime.

PHOTOGRAPHING. In photographing the falls remember that in good sunlight the water is very white and most photographers use too large a diaphragm opening in photographing them close-up. The distant views of the canyon in the morning in bright sunlight may be taken with a filter (2x or K1) stopping the movie camera diaphragm down to F11 or without a filter at F16, while stills are made at $1/25$ th of a second with a K1 filter, at F11 or without a filter at F16. More exposure should be given in taking views of the canyon in the afternoon on account of the deep shadows. Remember bears taken close-up are so dark that no filter should be used and movies should be taken at F5.6 to F8 and stills at $1/25$ th of a second (without filter) and at about F8, as a general rule, except at twilight when a much larger diaphragm opening is necessary.



(Top) AT THE BRINK OF THE UPPER FALL
HAYNES PICTURE SHOP, GRAND CANYON

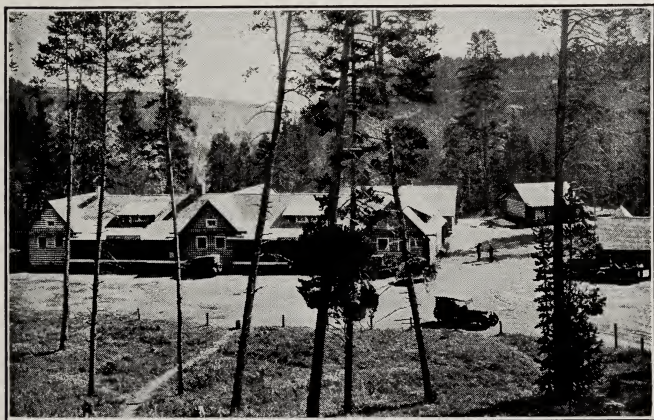
Returning from Artist Point we drive again past the Lodge to the Chittenden Bridge (Re-set speedometer to 108.4) and turn right. The next stop is at the platform at the Upper Falls (Mileage 108.9). Cars are parked a few rods further on at Haynes Picture Shop.

The UPPER FALLS (Mileage 108.9) has a perpendicular drop of 109 feet. The water strikes the shelving rock near the bottom of the abyss and shoots out rocket-like. Above the falls from the platform an excellent view of the rapids is had.

HAYNES PICTURE SHOP (Mileage 109.0) at the right of the road near the parking space carries a full line of park views, photographic supplies, books, and specializes in over-night photo finishing. From here the trail leads to CRYSTAL FALLS.

CANYON RANGER STATION (Mileage 109.0) at the right is the community center and ranger headquarters for this district.

PUBLIC AUTOMOBILE CAMP (Mileage 109.0) is reached by a side road to the left. Here is operated a large CAFETERIA,



PRYOR STORE, GRAND CANYON

a group of HOUSEKEEPING CABINS and a FUEL YARD where split wood in bundles of convenient size is available.

PRYOR STORE, GAS STATION, and U. S. POSTAL STATION (Mileage 109.1) are at the right of the road. Here may be purchased tourist supplies and curios.

CANYON JUNCTION (Mileage 109.2) (Symbol CJ). Be sure to take the right hand road to Canyon Hotel, Point Lookout, Grand View, Inspiration Point, Dunraven Pass, Mt. Washburn, Tower Falls, Roosevelt Lodge, and Mammoth Hot Springs. (The left hand road is a freight road to Norris Geyser Basin, which basin should be visited after leaving Mammoth Hot Springs.)

DISTANCES FROM CANYON JUNCTION (CJ) to Dunraven Pass 9.8; to summit of Mount Washburn 13.4; to Tower Junction (TJ) via Mount Washburn 27.4; via Dunraven Pass 24.8; Mammoth Springs (MS) via Dunraven Pass 42.4.



GRAND CANYON HOTEL



(Top) GRAND CANYON LODGE
(Bottom) GRAND CANYON HOTEL ENTRANCE



(Left) "YOU MEAN YOU NEVER HEARD OF UNCLE TOM?"
(Right) AT THE BRINK OF THE GREAT FALL

CASCADE CREEK BRIDGE (Mileage 109.3). A foot path leads from here to Crystal Falls 200 yards distant, downstream from the far end of the bridge.

BRINK OF GREAT FALLS (Mileage 109.7) is reached by 494 steps built down the slope of the upper canyon at this point.

The Great Falls carries an average maximum of 151,000,000 gallons of water per hour. The greatest flow is in June and July. The fall is 308 feet high and about 80 feet across at its top.

Left turn to GRAND CANYON HOTEL (Mileage 110.0). (Upon returning to the highway along the rim of the canyon re-set speedometer at this road junction at 109.7.) Grand Canyon Hotel was first opened to the public in 1911 but since that time has been greatly enlarged to accommodate a vastly increased patronage.

HORSEBACK TRIPS FROM CANYON HOTEL. Fourteen mile round trip to Seven Mile Fishing Hole. Twelve mile



GREAT FALL OF THE YELLOWSTONE

round trip to Grebe Lake. Eight mile round trip to Cascade Lake.

THE GRAND CANYON OF THE YELLOWSTONE defies description. It is famous for its gorgeous colorings, beautiful architecture, its waterfalls and the winding Yellowstone River that serpent-like threads its way through the tortuous, un-navigable course between its walls which are more than a thousand feet high. The canyon is viewed from many places along its rim and from the brinks of the falls; and quite a few climbers go down Uncle Toms Trail to the bottom of the gorge.

POINT LOOKOUT AND RED ROCK (Mileage 110.2). From here a path leads to Point Lookout and a trail part way down the Canyon side to Red Rock from which a splendid view of the Great Falls is had.

GRAND VIEW (Mileage 110.5). From the platform one gets an excellent view of the gorge.

GRAND VIEW JUNCTION (Mileage 110.7). Continue along the canyon rim about a mile further to Inspiration Point then return to this junction and turn north to continue the park tour.

GLACIAL BOULDER (Mileage 111.3). Scientists tell us that this huge granite boulder was transported from a point several miles north by a glacier. Throughout the whole northern portion of the park are many evidences of glacial action, three invasions of the region having been made. Just before reaching the Glacial Boulder a trail leads off to the left to the famous SEVEN-MILE HOLE, a favorite fishing rendezvous in the Yellowstone River in the bottom of the Canyon. Except on horseback this is a very hard trip. Horses may be obtained at the hotel.

INSPIRATION POINT (Mileage 111.7). A stop should be made here before returning to the Grand View Junction. Out on the platform one sees the Great Falls at the head of the Canyon; on the opposite rim is the platform at Artist Point; on several pinnacles below the spectator may be seen ospreys' nests which early each season are inhabited by the young of

this species. We return now to Grand View Junction (Mileage 110.7) and turn right on the Grand Loop Road to Dunraven Pass, Mount Washburn, Tower Falls, Roosevelt Lodge and Mammoth Hot Springs.

DUNRAVEN PEAK (Mileage 115.5) has an elevation of 9,700 feet. It was named in honor of the Earl of Dunraven, one of the early park visitors who wrote an interesting book about the region.

DUNRAVEN PASS (Mileage 116.5) has an elevation of 8,860 feet. In bad weather take the left hand road which is the low road. The right hand road leads to the summit of the famous park promontory, MOUNT WASHBURN (Mileage 120.1) which is 10,317 feet above sea level. This is the highest point attained by any of the park highways. This road leads up the south side of the peak and descends the north side joining the low road at the mileage of 123.0. On the summit of Mount Washburn is THE LOOKOUT a stone ranger station erected by the National Park Service for the free use of park guests. From the summit of this mountain when visibility is good one may see the Grand Canyon, Hayden Valley, Yellowstone Lake, and the distant Teton Mountains all to the southward; in the west are Cook Peak and Electric Peak. In descending the mountain motorists should remember to leave the motor always in gear, in either second or low gear, so that the brakes will not be needed to hold back the car. Many motorists in the past have burned their brake linings by not doing this. The descent from the summit of Mount Washburn is not accomplished until Tower Falls is reached, a distance of 8.6 miles.

BIGHORN SHEEP or MOUNTAIN SHEEP, are found where the scenery is grandest in high mountain places where none but bold and reckless climbers would dare to go. Its young are reared in the highest and most inaccessible places, and as a result, the larger birds are their only dangerous enemies. Bands of Mountain Sheep frequent the high bluffs and slopes of Mt. Washburn at the northern part of the park. They are also found in a few widely separated localities in the Rocky Moun-



(Top) DUNRAVEN PASS (Top) DUNRAVEN PEAK
 MOUNTAIN SHEEP, MT. WASHBURN MOUNT WASHBURN
 LOOKOUT ON SUMMIT OF MT. WASHBURN
 NORTH FROM MT. WASHBURN THE SUMMIT OF MT. WASHBURN



BUFFALO BULL (AMERICAN BISON)

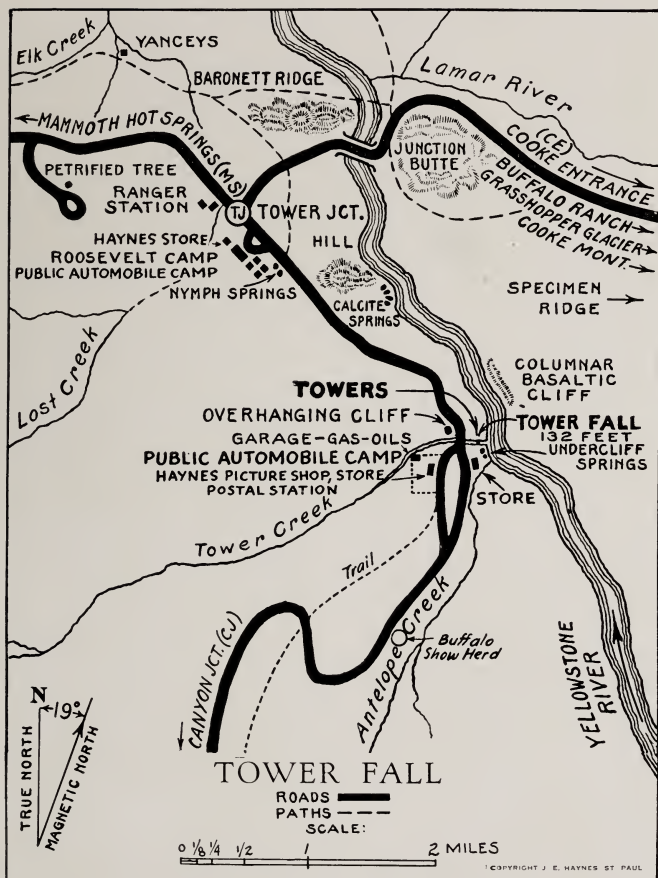
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tains from British Columbia to Mexico. No other wild animal has spiral close-whorled horns; those of the Mountain Sheep make nearly a complete circle and are circular in cross section and very heavy.

PHOTOGRAPHING. On Mount Washburn close-ups of your party are taken the same as at other places in the park but the distant mountains even on the clearest day require a ray filter or a short exposure as otherwise such views would be greatly over-exposed.

The **BUFFALO SHOW HERD** (Mileage 125.2), is seen below the highway near Antelope Creek south of Tower Falls.

TOWER FALLS PUBLIC AUTOMOBILE CAMP (Mileage 127.3) is reached by a short loop road at left, which re-enters the Grand Loop Road at the Haynes Store in the parking area. This camping area is small but has a fine water and sanitation system. This loop road re-enters at mileage of 127.6.



TOWER FALLS PARKING AREA (Mileage 127.5) is near Tower Falls which feature is seen from a platform reached by a short path. This is one of the regular stops which practically all visitors find interesting. Fishing at the mouth



TOWER FALLS

of Tower Creek where it joins the Yellowstone River, and in the entire area is usually exceptionally good. The principal fish taken here are the native, or cutthroat trout.

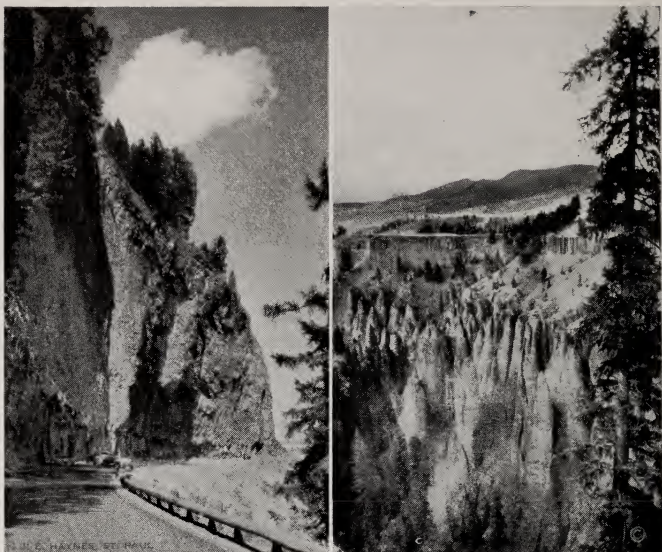
TOWER FALLS, HAYNES STORE AND PICTURE SHOP (Mileage 127.6) at the right of the parking area is unique in that refreshments and traveler's needs and all general store items are carried in stock besides the complete Haynes Picture Shops line of park views, supplies and books, fishing tackle, drugs, souvenirs and curios.

TOWER FALLS OF TOWER CREEK (Mileage 127.6) is reached by a short footpath at right. A trail leads to the foot of the canyon below the rock spires, or towers, for which the creek was named. Thomas Moran, famous western landscape painter, made a canvas of these rock towers which he considered outstanding among Yellowstone features. The fall is 132 feet high.

GRAND CANYON OF THE YELLOWSTONE near Tower Falls is the lower, or northern end of the gorge which makes



HAYNES STORE AND PICTURE SHOP, TOWER FALL



(Left) OVERHANGING CLIFF NEAR TOWER FALLS
(Right) NEEDLES IN GRAND CANYON

a giant sweep around the eastern base of Mount Washburn. The great basaltic cliffs on the opposite wall look like a giant stockade. A tall rock spire on the western side of the canyon is seen beyond Overhanging Cliff.

DISTANCES FROM TOWER FALLS (TF) AUTOMOBILE CAMP to Camp Roosevelt 2.6; Tower Junction (TJ) 2.8; Buffalo Ranch 13.6; Cooke, Montana 36.7; to Mammoth Springs (MS) 19; to North Entrance (NE) 24 miles.

PHOTOGRAPHING. Be cautious in photographing bears, and remember that they are not always to be trusted. Pictures of bears are usually under-exposed due to their dark color. Tower Falls may be photographed at most seasons up to shortly before noon at which time the shadows begin to envelop the falls. To show good water detail in good light

take your movies at F11 without a filter and your stills at 1/25th of a second without a filter at about F11.

FISH AND FISHING. In the Yellowstone River are Rocky Mountain Whitefish, Redthroat (Cutthroat, Blackspotted, Native) Trout, Rainbow Trout, Scotch Lake Trout (Loch Leven). One may fish the waters of Yellowstone National Park without a license but outside of the park boundary in Montana one must have a license. Fishing tackle may be procured at the Haynes General Store.

Towers above Tower Falls (Mileage 127.6) are at right. These rock towers are responsible for the name of Tower Creek and Tower Falls.

OVERHANGING CLIFF (Mileage 127.8) is interesting in that the highway has been built wholly under the overhanging basalt. Across the Canyon of the Yellowstone are seen the pentagonal rock columns of basalt which resemble a man-made stockade. The highway is about a thousand feet above the river at this point.

The **NEEDLE** (Mileage 128.0) is seen at the right.

RAINY LAKE (Mileage 128.9) is at right.





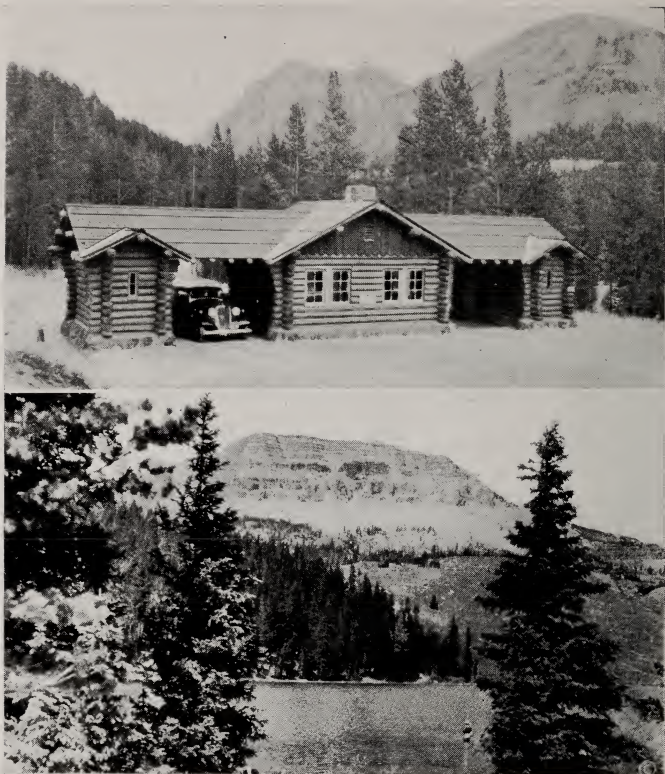
INDEX PEAK, ELEVATION 11,740, AND PILOT PEAK

CAMP ROOSEVELT (Mileage 129.6) is a short distance at the left of the highway. It is operated by Yellowstone Park Company and consists of a large central building and a number of cabins. The GENERAL STORE AND PICTURE SHOP here is operated by Haynes Picture Shops, Inc.

TOWER JUNCTION (Mileage 129.8). The right hand road offers a very interesting ride to the following features: BEAVER DAMS (Mileage 130.5) are seen at the left of the highway. YELLOWSTONE RIVER BRIDGE (Mileage 130.6) is near the site of the old Baronett bridge which was destroyed many years ago. Its abutments still remain and may be visited by a path leading to the left a few hundred yards down-stream from the far end of the present bridge. LAMAR RIVER BRIDGE (Mileage 134.6) next is crossed. BUFFALO RANCH (Mileage 137.6) is maintained by the National Park Service in connection with the care of about a thousand buffalo which constitute the main herd in the park. In the summer time these wild buffalo range far up in the hills and cannot be seen from the highway. SODA BUTTE (Mileage 143.6) is a high, now extinct hot spring cone. Nearby is a RANGER STATION. COOKE, MONTANA (Mileage 160.7) is a quaint mining town which came into being very early in the history of the state. It is situated in the heart of a group of towering mountains outside of the park and at the foot of REPUBLIC MOUNTAIN. GRASSHOPPER GLACIER where millions of grasshoppers are imbedded in the ice is accessible only by horseback, the round trip from Cooke totaling about 25 miles. Horses, competent guides and permanently established camps are provided. The highway leads from the Northeast Entrance near Cooke to Red Lodge, Montana, a distance of about 65 miles through stupendous mountain country, now a new park entrance.

(At Tower Junction set speedometer at the mileage of 129.8 and turn right.)

TOWER FALLS RANGER STATION (Mileage 130.0) is the headquarters for the rangers of this district.



(Top) COOKE ENTRANCE CHECKING STATION AND REPUBLIC MOUNTAIN
BEARTOOTH LAKE AND BEARTOOTH BUTTE

ROAD JUNCTION (Mileage 131.1). Left road goes to the PETRIFIED TREE (Mileage 131.6) where one of the largest specimens in the region is seen. This stump was partly excavated to show it to advantage. This same hillside has at least 50 other stumps but only the tops of them show. If



PETRIFIED TREE

BLACK BEAR

you will take the trouble to explore this hillside you will be amazed at the size and number of these petrifications which are several million years old. You are cautioned to not collect or take away any specimens, but cooperate with the National Park Service in the complete preservation of all the park exhibits. (From here we return to the main highway at which point the speedometer is set back to 131.1.)

ELK CREEK (Mileage 131.6).

BEAVER may be seen at Floating Island Lake (Mileage 132.8) at the foot of Crescent Hill near the main road.

GEODE CREEK (Mileage 136.2).

BLACKTAIL DEER CREEK (Mileage 141.6).

LAVA CREEK (Mileage 143.4).

UNDINE FALLS (Mileage 143.9). From here a trail at the right leads to the falls. The flat topped mountain is Mount Everts which is mostly sedimentary (Cretaceous) and fossil bearing, however it will be observed that there is a layer of volcanic rock at the top.

GARDINER RIVER TRESTLE (Mileage 146.2) is the highest and longest one in the park. At the left is BUNSEN PEAK named in honor of the famous German physicist Dr. Robert W. Bunsen who studied the geysers of Iceland and evolved the generally accepted theory of geyseric action applicable to all geysers including those in the Yellowstone.

MAMMOTH PUBLIC AUTOMOBILE CAMP (Mileage 147.7) is at the right. Here the companies operating in the park have provided all of the services demanded by park guests including housekeeping cabins, cafeteria, general store, Haynes Picture Shop specializing in overnight photo finishing, and a Fuel Yard where split wood in bundles of convenient size is available.

MAMMOTH HOT SPRINGS JUNCTION (Mileage 147.8) (Symbol MS). The left road leads to Haynes Picture Shop, Mammoth Springs Lodge, the Museum and Information Office and the office of the Superintendent of the park. The right hand road leads to the Northern Entrance of the park 4.5 miles distant.

EXPLANATORY NOTE

The Haynes Guide Book is so arranged that it serves equally well from all five park entrances. The tour from the North Entrance at Gardiner, Montana, begins on page 19; from the East Entrance, via Cody, Wyoming, page 90; from the West Entrance at West Yellowstone, Montana, page 51; from the South Entrance, via Grand Teton National Park and Moran, Wyoming, page 77; and from the Northeast Entrance, page 117.

(For continuation of the description of the park tour from this point turn back to page 24.)

Elevations

ELEVATIONS AT PARK ENTRANCES:

	FEET
Northern Entrance at Checking Station.....	5,313
Eastern Entrance at Checking Station.....	6,950
Western Entrance at Checking Station.....	6,688
Southern Entrance N. E. of Checking Station.....	6,882

ELEVATIONS ON GRAND LOOP ROAD:

Mammoth Hot Springs Museum.....	6,238
Golden Gate, Kingman Pass.....	7,255
Madison Junction.....	6,804
Old Faithful, at Old Faithful Geyser.....	7,365
Continental Divide (first crossing).....	8,261
Continental Divide (second crossing).....	8,364
West Thumb Junction, near Ranger Station.....	7,782
Yellowstone Lake.....	7,731
Lake Junction.....	7,791
Sylvan Pass.....	8,559
Canyon Junction.....	7,733
Dunraven Pass.....	8,860
Mount Washburn, at the Lookout.....	10,317
Tower Falls Camp Ground.....	6,597
Tower Junction.....	6,264

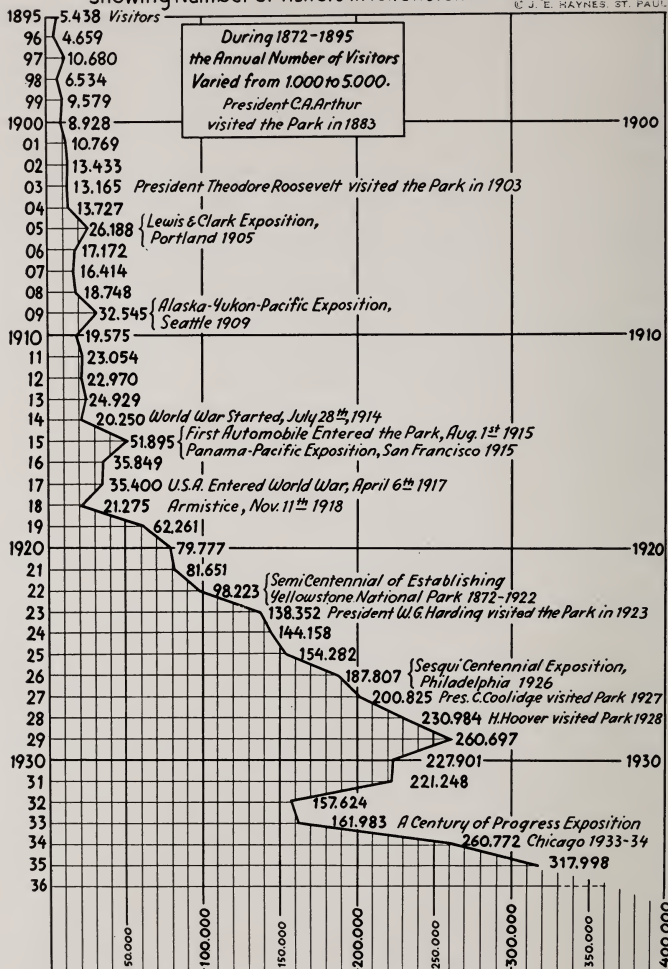
ELEVATIONS OF PRINCIPAL MOUNTAINS:

	FEET		FEET
Antler Peak.....	10,200	Mount Haynes.....	8,000
Bunsen Peak.....	9,100	Mount Holmes.....	10,300
Colter Peak.....	10,500	Mount Humphrey.....	11,000
Cook Peak.....	9,500	Mount Langford.....	10,600
Dome Mountain.....	9,900	Mount Sheridan.....	10,250
Dunraven Peak.....	9,700	Mount Washburn.....	10,317
Eagle Peak.....	11,359	National Park Mtn.	7,500
Electric Peak.....	11,155	Quadrant Mountain.....	10,200
Index Peak.....	11,740	Sepulchre Mountain.....	9,500
(Near Cooke Entr.)		Terrace Mountain.....	8,100
Mount Everts.....	7,900	Top Notch Peak.....	10,000

TRAVELGRAF

Showing Number of Visitors in Yellowstone National Park

U. J. E. HAYNES, ST. PAUL.



History

ALTHOUGH most of it was included in the great Louisiana Purchase of 1803, the Yellowstone Park was not then known to white men. Probably the first one who ever saw any of its hot springs or geysers was John Colter who left the celebrated Lewis and Clark Expedition which was on its return to St. Louis, in 1806, and started for the headwaters of the Yellowstone River to trap and hunt. This lone adventurer passed southwestward in 1807 from the mouth of the Big Horn to the Forks of the Shoshone River where he discovered an immense tar spring; he continued on through a country where much hot spring and geyser phenomena exists and down the Yellowstone River to the ford at Tower Fall, thence out near the northeastern corner of what is now the National Park.

After four years of peril among the Indians and a miraculous escape from the hostile Blackfeet, he returned in 1810 to St. Louis. His wonderful tales were hard to believe and the place he described (which was thought to be the product of his imagination), was termed "Colter's Hell."

John Colter

1807

By OLIN D. WHEELER

In May, 1804, there left the village of St. Louis, a party of explorers bound for the mouth of the Columbia River. This exploration was planned by President Jefferson, and, after Congress sanctioned it, was placed in charge of Meriwether Lewis, Mr. Jefferson's private secretary. Lewis associated with him as an equal in command, his particular friend Captain William Clark, and this national adventure, as it may well be termed, is known as the Lewis and Clark Expedition. It traveled in small boats up the Missouri River and the Jefferson River, a continuation of the Missouri, to the limit of navigation; crossed the Rocky Mountains to the Clearwater River, on horses procured from the Shoshone Indians; navigated that stream and the Snake and Columbia rivers in

canoes made by themselves from pine trees; spent the winter of 1805-6 near the present city of Astoria, Oregon, and returned in 1806 by much the same route, reaching St. Louis in September, 1806, having most successfully accomplished its mission with the loss of but one man.

The party consisted of forty-five persons when it left St. Louis, the greatest care being used to obtain men specially fitted for the peculiar duties and dangers to be encountered. Men of strong, healthy bodies and alert minds were needed and, naturally, men well acquainted with border life in all its peculiar phases were chosen.

Aside from the leaders themselves, the man who achieved the most eminence was John Colter, and curiously enough it was the result of adventures and feats performed in the years immediately following the return of Lewis and Clark. His duties on that noted exploration were carried out satisfactorily to his chiefs, but he is entitled to no distinction in this respect above his fellow comrades.

When these explorers, on their return, arrived at the villages of the Mandan Indians near the mouth of Knife River, North Dakota, where they had wintered in 1804-5, they met two white men, trappers, on their way to the smaller tributary streams of the Yellowstone and Missouri rivers in the wilds of what is now Montana. The trappers offered Colter such inducements to go with them that he asked Lewis and Clark for his release, which was granted. He, accordingly, and before returning to the delights of frontier civilization, such as they were, buried himself once more in the wilderness for several years. This time was spent in trapping beavers and other animals, which then were most abundant in the mountain streams, for their furs which were extremely valuable. During this time Colter passed through the experiences and performed the exploits which have made him a historical character.

The man seems to have been a natural rover and adventurer. The lure of the plains and prairies and mountains, with their magnificent distances, marvelous mirages, beauti-

ful vistas, unique and wonderful canyons, entrancing waterfalls, great rivers, alpine crags and peaks, cool, timbered plateaus, gorgeous sunsets and game dotted valleys and parks; to roam abroad in solitude, afar from the haunts of men, where boundless forests and pine and snow topped mountains enclosed him about, and wild beasts—bisons and elk and deer and bears and mountain lions ranged or made their lairs, seems to have just suited his temperament.

It is to be regretted that we have not a fuller and more detailed account of the adventures of this remarkable man after he ceased his connection with Lewis and Clark. He doubtless did recount to many individuals the experiences which befell him, but they were probably considered as not at all unusual for the time and hence little or no attempt was made to preserve them. More likely, they were thought to be utterly beyond credence, and, so unworthy of preservation. The stories of these mountain men and plains wanderers were, in those days, received by the dwellers in the towns and settlements on the frontier with much disbelief, and many who did believe them were ridiculed for their credulity. But some of his stories were told to men who appreciated their historical value. To John Bradbury, an English naturalist, and Henry M. Brackenridge, a traveler and writer, we are indebted for such knowledge as we have regarding Colter after 1806.

As the late General H. M. Chittenden well says, the glimpses of Colter's record as given by these two men "clearly indicate that he was a man of superior mettle to that of the average hunter and trapper."

While "these glimpses" are fragmentary they justify General Chittenden's statement, but they leave much unrevealed as to Colter's movements. He and the two trappers apparently wintered during 1806-7 on the Yellowstone River or some one of its tributary streams. At that time these streams abounded with beavers.

In the summer of 1807 some reason not definitely known, impelled Colter, whether alone or in the company of Crow

or other Indians, is not known, to make an extended journey into territory not covered by Lewis and Clark, but adjacent thereto. In doing this Colter, without knowing it, made the discovery, of world interest, which alone would have immortalized him on the pages of history. This discovery, fortunately, for the world, attracted no particular attention for more than sixty years. This was owing to the fact, before stated, that the tales of these mountaineers and adventurers were so largely disbelieved, and were forgotten almost as soon as told. COLTER IN HIS WANDERINGS OF 1807 DISCOVERED THE MARVELOUS REGION NOW KNOWN AS YELLOWSTONE PARK. There can be no dispute as to this because Lewis and Clark in their voluminous report of their expedition which did not appear until 1814, in a map of the Rocky Mountain region show "COLTER'S ROUTE IN 1807," the trail being distinctly marked.

Colter's trail has been the subject of some discussion. He evidently started from, and returned to, his camp on Pryor's Fork, or creek, in Montana. He crossed the various detached ranges of the Rocky Mountain chain between the headwaters of Wind River and those of the Snake River, passing around the southern end of Jackson Lake, Wyoming. Then traveling north he soon recrossed the mountains, north of Jackson Lake, to Yellowstone Park, skirted the west side of Yellowstone Lake, followed, evidently, the well known lower Mt. Washburn trail along the rim of the Grand Canyon to Tower Fall, forded Yellowstone River at that point, and then returned to his starting point.

Colter on this trip visited none of the large geyser basins judging from his trail. Besides Lakes Jackson and Yellowstone and the Grand Canyon, Colter must have seen Lewis and Shoshone Lakes, the paint pots, hot springs and small geysers at the West Arm of Yellowstone Lake, the three falls at the head of the Grand Canyon and many of the hot pools and mud springs found along his route and particularly those between and about the Grand Canyon and Tower Fall. He may have visited Mammoth Hot Springs, as a point marked "Hot Springs, Brimstone," across the mountains north of the

Grand Canyon, may stand for that interesting locality with its wonderful nature painted terraces, hot pools and caves.

This, in brief, rehearses the story of the now historic trail and discoveries of this hardy, intrepid ranger of the wilds, when the outposts of civilization and border settlement were a thousand miles to the eastward. To fill in the details, the days of toil and fatigue, of burning heat and drenching storms, of thirst and hunger, danger from wild beasts and accident—these the imagination must picture.

James Bridger

1830

By OLIN D. WHEELER

Among the many men engaged in the old frontier life, none achieved a wider, more enduring and deserved reputation for all that such a life demanded, than did the redoubtable James Bridger.

The story of his career well illustrates what the life of that class of men was, the hardships they encountered and how they endured them, the rude border surgery practiced, the dangers to which they were hourly exposed, their bravery and resourcefulness, the distinguishing abilities disclosed now and again, by conspicuous examples in, perhaps, most unexpected ways, and the suddenness with which death came to so many of them.

Bridger was a native of Virginia, and was born in Richmond in 1804. His father is said to have been a farmer and also a hotel keeper in Richmond. When young James was about eight years old the family migrated to Missouri, near St. Louis, where the father followed the calling of surveyor. The mother died in 1816, and the father in 1817, leaving two children, James and a sister, who were cared for by an aunt who later became the wife of John Tyler afterwards President of the United States. The latter, therefore, became an uncle to Bridger by marriage. James, after his father's death sup-

ported his sister and himself. At one time he ran a flatboat ferry and again he was apprenticed to the blacksmith's trade.

In 1822 he began the career which was to make him famous among the daring and historical characters of the west. In that year he became one of a band of trappers in the employ of the Rocky Mountain Fur Company, under General W. H. Ashley, one of the most noted of the men who organized and directed the American Fur Trade of those days.

Bridger was one of the discoverers of the celebrated South Pass of the Rocky Mountains. The Pass lies on the Continental Divide in Wyoming.

It became one of the most widely known and important geographical features of the Rocky Mountain chain. It was directly in line with the westbound route, or Oregon trail as it was generally called up the Platte River from the East, to Fort Hall, Idaho, and the North Pacific Coast.

The winter of 1823-24 found Bridger in Utah. So far as is actually known he that winter became the sole discoverer of Great Salt Lake.

Bridger was one of the first men, after John Colter, to see and tell others about Yellowstone Park. This was of course, long before the park was established or the public at large knew anything about that now world famous locality. Just when Bridger first explored this mysterious region is not actually known. It would appear that it was at a very early period, probably about 1830, perhaps earlier, and that he certainly visited the region more than once for he was, unquestionably, thoroughly acquainted with its unusual character, and was ever ready to talk about it and recount its wonders.

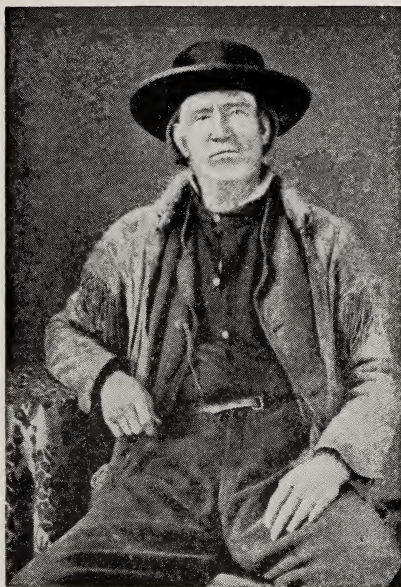
So true was this and so skeptical were the people of that day to believe anything that seemed out of the ordinary, that Bridger, with his stories about geysers and hot springs, the wonderful canyons and waterfalls, etc., obtained the reputation of being the champion prevaricator of his time. The newspapers of the frontier absolutely refused to print his tales for fear of being laughed at and ridiculed.

All this disbelief aroused, not unnaturally, the ire of "the

old man of the mountains," and he concluded that he would live up to the reputation placed upon him.

It has been well said that then "He did not hesitate to 'guy' the unsophisticated."

Near the southeast corner of Yellowstone Park and not far from the present park boundary, is one of Nature's most remarkable productions particularly from a geographic standpoint. It is known as Two Ocean Pass and comprises two small streams, Pacific and Atlantic creeks, flowing into each other in such a way that water from each one passes into both the Atlantic and Pacific oceans. This very interesting spot was also discovered and made known to the world by Bridger. Aside from the geographic fact mentioned Two Ocean Pass is interesting in another way. It was early noted



JAMES BRIDGER

that in all the streams in Yellowstone Park having falls, with one exception there were plenty of trout below the falls, the latter proving obstacles that the trout could not surmount, and, therefore, no fish were found above the numerous falls. The one exception noted was the Yellowstone River, the largest stream of all and with two high falls near together and impossible for trout to overleap. Here there were trout above as well as below the falls. For a long time the question as to how the trout happened to be found in the upper river waters, was a puzzling problem. Finally it was discovered that at high water small trout native to Pacific Coast waters were able to go through the Two Ocean Pass into Yellowstone River and Lake above the two high cataracts near the Grand Canyon, where they are found today.

Just north of the junction of Atlantic Creek and Yellowstone River is a small lake named in honor of this mountaineer, Bridger Lake.

In 1865-6 Bridger was connected with the late General G. M. Dodge, Chief Engineer of construction of the Union Pacific Railway, as scout and guide. General Dodge conceived a strong liking and admiration for the old plainsman and, after the death of the latter, finding that his remains were interred on his farm and the grave was being neglected, he obtained a beautiful burial site in Mount Washington Cemetery, Kansas City, had the remains removed thereto, and erected a fine monument over them suitable to the character and achievements of the man. The writer made a special visit to this cemetery and grave some years since and was glad indeed to see that the noted old trapper and mountaineer had found such a beautiful resting place, at the end of his long, rough life journey.

General Dodge, who himself but recently passed away, published a pamphlet recounting in some detail the life history and adventures of this remarkable frontiersman.

"I found Bridger," he says, "a very companionable man. In person he was over six feet tall, spare, straight as an arrow, agile, rawboned and of powerful frame, eyes gray, hair brown

and abundant even in old age, expression mild and manners agreeable. He was hospitable and generous, and was always trusted and respected. He possessed in a high degree the confidence of the Indians. He was one of the most noted hunters and trappers on the plains.

"While engaged in this thorough system of trapping, no object of interest escaped his scrutiny, and when once known it was ever after remembered. He could describe with the minutest accuracy places that perhaps he had visited but once, and that many years before, and he could travel in almost a direct line from one point to another in the greatest distances, with certainty of always making his goal."

Major Bridger was three times married, each time to an Indian woman. His first wife was the daughter of a Flathead, or Selish, Indian chief and she died in 1846, leaving two children, who were sent to St. Louis to school. The second wife was a Ute Indian woman. She died in 1849, leaving a little baby that was brought up on the milk of a buffalo, or bison, and grew to womanhood and married. In 1850 Bridger married a Snake, or Shoshone, woman who died in 1858, leaving two children.

The end came on July 17, 1881, at 77 years of age. And what crowded, eventful years they had been where he had trailed and camped and feasted and starved, and roughed it in every conceivable fashion, and fought Indians and Whites. He passed away at just the right time for the old west as Bridger had known it—was also gone.

And what a change in the Yellowstone of Colter and Bridger! During their lives no one would believe their wonderland stories. Now, the Yellowstone, the first and precursor of all our National Parks, is visited each season by nearly 100,000 persons, from all parts of the world—"Sic eunt fata hominum." (Since Mr. Wheeler wrote this article travel has increased to nearly 500,000 annually.)

The Park had been described in part by some of the early hunters, but their knowledge of the place was limited, due to the fact, no doubt, that the region was so diffi-

cult to explore; and it is a fact worthy of note that until 1842 no written description of these geyser regions had ever appeared. But in that year the first description of the geysers was seen in print, but the author's name was not revealed. (Since Mr. Wheeler wrote this article the written account dated 1827 quoted in the following pages was discovered.)

In the year 1900, however, Mr. Olin D. Wheeler, of St. Paul, the author of the well-known "Wonderland Series of the Northern Pacific Railway" and of "The Trail of Lewis and Clark," discovered the identity of the writer. He was Warren A. Ferris of the American Fur Company, whose early home had been in western New York. In 1834 with two Indians he visited one of the geyser areas, it is not definitely known which, and wrote the description noted which was first printed in the Western Literary Messenger of Buffalo, in July, 1842, from which the Wasp, a Mormon paper of Nauvoo, Illinois, copied it without giving credit to the Messenger. Ferris died near Dallas, Texas, in 1873.

Warren Angus Ferris

1834

By OLIN D. WHEELER

Closely following the discoveries and knowledge of the park region gained by Bridger, and his imaginative and extravagant tales of it, exaggerated for a purpose, the third member of the Human Triangle Heroic made the visitation which in time has immortalized him. But, it was long ere the identity of this individual was ascertained.

On August 13, 1842, the Wasp, a Mormon newspaper of Nauvoo, Illinois, the locus of the Mormon people prior to the migration to Utah, published an article by an unknown writer recounting his journey to, and observations on, the geysers and hot springs in the western part of the park region. "And now doth time waste" itself for the story of these wonders, probably largely disbelieved, passed into oblivion and not

until full thirty years later was it resurrected and made a part of the recognized literature of the park. And still no hint of the personality of the explorer and litterateur.

Then Fortune was, indeed, kind to the present writer. A friend interested in the park informed me of an article incidentally seen by him, which I at once surmised was the Wasp production here mentioned, which was unknown to my informant. Curiosity was piqued when the publication containing the dissertation was found to be an eastern one.

A few days later Volumes II and III of the Western Literary Messenger of 1842-44, published in Buffalo, N. Y., were handed to me and lo! there, in the issue of July 13, 1842, was the original story as printed by the Wasp, but without showing the authorship. The reprint by the Wasp, therefore, without even giving credit to the Messenger, necessarily was shown without the writer's name because it was unknown to the Wasp.

From bound volumes of the Messenger, kindly forwarded to me by one of the Buffalo Libraries, and correspondence with members of the Ferris family at Buffalo, I was able to develop something of the life of our third member of the Human Triangle Heroic.

Warren Angus Ferris, of Quaker parentage, was born at Glens Falls (presumably), N. Y., December 26, 1810. About the beginning of the War of 1812, his parents removed to Erie, Pennsylvania, where his father, Angus Ferris, became one of the earliest owners of vessels on the Great Lakes and was engaged in furnishing supplies to the American army. The father died at Erie, September 10, 1813, the day of Perry's victory at Put-in-Bay, and in 1814 the widow and her two children removed to Buffalo, New York.

Ferris received a good education for that day as a civil engineer. Upon returning from the Rocky Mountain country he removed to Reinhardt, Texas, married and raised a family, and died in 1873 at the age of sixty-three years.

He followed his engineer's calling in Texas and attained to worthy eminence among the people.

His life among the mountains never lost its hold upon him, which, those of us who have passed through the same experiences in one way or another that he did, easily understand.

The two principal claims to distinction that Ferris possesses in connection with the history of Yellowstone Park, are first, that he was, unlike Colter and Bridger, a well educated man for that day. Second, that he was the first person to write and have published a descriptive tale of the region, its hot water reservoirs and fountains. And this, be it remembered, was at a very early period in the history of the west; before Whittier, who could have visioned, could not yet hear, "The Tread of Pioneers" and the "First Low Wash of Waves" which was soon to "Roll a Human Sea" over the wide and wandering game dotted plains and forest canopied mountains, of that "One Stupendous Whole Whose Body Nature Is."

This Human Triangle Heroic—Colter, Bridger, Ferris, as "Time, the beautifier of the dead" continues in the future to "roll his ceaseless course" along, deserve at least the reasonable respect and acclamation of American humanity and history.

Simple and unlearned, for the most part, "rude forefathers of the hamlet," as present or future generations may look upon them, each and all three filled, in their time, and as God had fashioned them, a niche of life and history that many a man far more learned in book lore and knowledge as the world looks upon it, would give a large stake, to pass across the last divide so worthily and deserving the "well done," as did they. Of each one, indeed, I trust it is "Requiescat in Pace."

—Olin D. Wheeler.

HISTORY—Continued

Yellowstone wonders were described in an article published in the Niles Register on July 8, 1827. The following excerpt is quoted from *The Ashley-Smith Explorations and the Discovery of a Central Route to the Pacific—1822-1829*

by Harrison Clifford Dale under the heading, "Explorations of Jedediah Smith", page 277:

"During Smith's prolonged absence, the other partners had maintained a hundred men in the field but divided into groups, which had operated on the usual streams of the Interior Basin and in adjoining territory. In the fall of 1826 and spring of 1827, they had pushed north to the southern tributaries of the Columbia, but, by keeping well to the east, had avoided the Hudson's Bay Company's Snake expedition of that year, commanded by Peter Skene Ogden. During the spring hunt, it is highly probable that one detachment penetrated as far as the Yellowstone National Park, and that one of the party wrote the graphic description of that region which appeared in Niles Register of October 6, 1827. This description, having apparently escaped the notice of the historian of the Park, deserves to be quoted in full. (561.)

Sweet Lake, July 8, 1827.

Shortly after writing to you last, I took my departure for the Black Feet country much against my will, but I could not make a party for any other route. We took a northerly direction about fifty miles, where we crossed Snake River, or the South fork of Columbia, at the forks of Henry's and Lewis's; at this place we were daily harrassed by the Black Feet; from thence we went up Henry's or north fork, which bears north of east thirty miles, and crossed a large rugged mountain which separated the two forks; from thence, east up the other branch to its source, which heads on the top of the great chain of Rocky Mountains which separates the waters of the Atlantic from those of the Pacific; at or near this place heads the Suchkadee or California, Sticking (Stinking?) fork, Yellow Stone, south fork of Masiore (sic), and Henry's fork; all those head at one angular point; that of the Yellow Stone has a large freshwater lake near its head at the very top of the mountains, which is about 100 by 40 miles in diameter, and as clear as crystal. On the south border of this lake is a number of hot and boiling springs, some of water and others of most beautiful fine clay, resembling a mush pot, and

throwing particles to the immense height of from 20 to 30 feet. The clay is of a white, and of a pink color, and the water appears fathomless, as it appears to be entirely hollow underneath. There is also a number of places where pure sulphur is sent forth in abundance. One of our men visited one of these whilst taking his recreation, there, at an instant, the earth began a tremendous trembling, and he with difficulty made his escape, when an explosion took place, resembling that of thunder. During our stay in that quarter I heard it every day. From this place by a circuitous route to the north west we returned."

"(562.) Smith, Jackson, and Sublette were probably the only Americans engaged in the country fifty miles south of Snake River as early as the year, 1827. They also traded with the Blackfeet this season, and one of their parties, commanded by Robert Campbell, penetrated this region the following year. Letter of W. H. Ashley to T. H. Benton, St. Louis, January 20, 1829, in United States Senate, Executive Documents, 20th Congress, 2d session, vol. 1, no. 67."

Another early reference to Yellowstone concerns Joseph L. Meek (1829-1840), quoted from *The River of the West* by Frances Fuller Victor which follows:

"Joseph L. Meek, Rocky Mountain Trapper and Hunter, was born in Washington County, Virginia, in 1810 and died in Oregon.

He first went with Captain William L. Sublette to the Rocky Mountains in 1829 in the employ of the Rocky Mountain Fur Company. He was at the Trapper's Rendezvous on the Popo Agie (Headwaters of the Big Horn) in July 1829.

Was a companion of Jedediah S. Smith, Kit Carson, James Bridger, Milton Sublette, David Jackson (of Jackson's Hole), Johnson Gardner (of Gardiner's River) and other trappers and mountain men of the olden time.

In November, A. D. 1829, he wandered into the region now known as the Yellowstone National Park. He saw, and afterwards described, the Mammoth Hot Springs and some of the geysers, probably those at Norris Geyser Basin. This

description by Meek is given in *The River of the West*, page 75.

Meek made a journey of 300 miles on snow shoes from the trappers rendezvous among the Nez Perces to the Bitter Root Valley in the winter of 1831-2.

In the spring of 1837, Meek with a brigade of trappers under the command of James Bridger rendezvoused "on the North Fork of the Yellowstone, near Yellowstone Lake" ("The River of the West," page 237). This was probably in what is now known as Hayden's Valley in Yellowstone Park.

An interesting description of this camp and rendezvous in the Park is given (pages 237 and 238), where the trappers were visited by a party of missionaries on their way to Oregon. Here also was Captain Stuart, an Englishman, and his party who came to the Rocky Mountains to hunt at that early period.

A Hudson's Bay trader named Ermatinger was camped near by in the Park. A party of Shawnees and Delawares were with the trappers. The strange scenes of this early camp in Yellowstone Park are well described.

Joseph L. Meek hunted, trapped and fought Indians in the Wind River Mountains, on the Upper Yellowstone, in the Gallatin Valley, and on the head waters of the Missouri River from 1829 to 1840. He met Captain B. L. E. Bonneville several times in the Rocky Mountains whose adventures are written by Washington Irving in his "Captain Bonneville's Adventures."

At the house of Senator Thomas H. Benton, Meek met Captain John C. Fremont, and his old friend Kit Carson. Fremont married Jessie Benton, the daughter of the Senator. After Meek's return to Oregon he was elected a member of the legislature of that territory. He was well known to the old settlers of Portland, Oregon."

Osborne Russell and three others spent 17 days in Gardiner's Hole and a few days in the Burnt Hole in 1835. Osborne returned in 1836 and also in 1839 as disclosed in "The Journal of a Trapper" by himself.

James Gemmell claims to have gone on an Indian trading expedition in 1846 with Jim Bridger, up the Green River to the Tetons, thence to Yellowstone Lake, Upper and Lower Geyser Basins and Mammoth Hot Springs, then down the Yellowstone River to Benson's Landing.

Father Pierre-Jean De Smet, a Jesuit Missionary, visited the park region in 1851 as a missionary among the Indians.

Captain W. F. Raynolds' expedition, which included Prof. F. V. Hayden, Jim Bridger and others, tried to reach the Yellowstone region in 1859-1860 but were blocked by snow-covered mountain ranges. Captain Raynolds in his report on the "Exploration of the Yellowstone" in 1859-60 states regarding the "Munchausen Tales" about the Park:

"One was to this effect: 'In many parts of the country petrifications and fossils are very numerous, and, as a consequence, it was claimed that in some locality (I was not able to fix it definitely) a large tract of sage is perfectly petrified, with all the leaves and branches in perfect condition, the general appearance of the plain being like that of the rest of the country, but all is stone; while the rabbits, sage hens and other animals usually found in such localities are still there, perfectly petrified, and as natural as when they were living; and, more wonderful still, the petrified bushes bear the most wonderful fruit; diamonds, rubies, sapphires, emeralds, etc., etc., as large as black walnuts, are found in abundance.'"

The following is taken from the report made to the late Dr. F. V. Hayden, chief of Geological Survey of Territories, by Henry Gannett, E. M., on the geographical field work of the U. S. Geological Survey.

"The story of the remarkable fruit borne by these stone trees is not far from correct, the main difference between the story and the fact being that the fruit is borne on the outside and inside of the trunk of the trees, instead of on the ends of the branches. The mineral species are not as given in the story, either, but this is a matter of no vital importance. In the process of the silicification of wood the last result of

all is the production of quartz crystals. The trunk is converted totally into crystalline quartz, radiating from within outward, the crystals being all crowded out of shape. The inside and outside of the hollow cylinder of quartz, which represents the former tree, are covered with the characteristic quartz pyramids. Such products of silicification are very abundant in the Park, particularly on Amethyst Ridge, and are, undoubtedly, the stone fruit of the petrified trees and bushes. The crystals are colorless, amethystine or yellow, and according to the color, are known to the mountain men as diamonds, amethyst, topaz, etc. It is unnecessary to say that the part of the story relating to animal life was manufactured from the whole cloth."

Captain John Mullan mentions the Park geysers in his report to the government in 1863 and states that he visited them.

In the same year (1863) Captain W. W. DeLacy, heading a large party of prospectors from Montana, struck Snake River near the junction of Henry's Fork, prospected in Jackson Hole but were unsuccessful and disbanded. With a part of the party Captain DeLacy went up the Snake River and Lewis Fork and discovered Lewis and Shoshone Lakes, and Shoshone and Lower Geyser Basins. The route was shown on a map of Montana drawn by him and published in 1864-5 by the Territory of Montana.

The results of this trip seem to have attracted little or no attention, for we hear of no one going into the country until 1869, when the prospectors, Cook, Folsom and Peterson, made a prospecting tour through the park. They followed the Yellowstone up to the mouth of the East Fork, then up the latter stream for a few miles, crossing over to the Yellowstone at the Great Falls; thence they went up this stream to the foot of the lake and around the east side of the latter to the extremity of the west arm; thence crossing over to Shoshone Lake and Lower Geyser Basin on the Madison or Firehole and finally left the country by following down the Madison River.



EXPLORER C. W. COOK AND FORMER DIRECTOR H. M. ALBRIGHT 22234

Their story, written by C. W. Cook and David E. Folsom, and published in the *Chicago Western Monthly* for July, 1870, immediately attracted attention. C. W. Cook, who attended the semi-centennial celebration of the establishment of the Yellowstone held in 1922 at National Park Mountain, states regarding changes noted since his trip of 1869 as follows:

"In visiting the park after an absence of fifty-three years, I find considerable changes. The Mud Volcano is absolutely changed, its activity now being unworthy of much attention. At that time it was so active that it was almost impossible for us to sleep in our camp on the river almost half a mile away. The features at the Thumb have become so changed that they are of less interest now. We did not see the Excelsior Geyser in the Lower Geyser Basin in action while we were there in 1869, but at that time the crater appeared to be much smaller than now, and was full and overflowing with boiling hot water."

The following summer, 1870, a party, composed of prominent citizens of Montana, under the leadership of Gen-

eral Washburn, then Surveyor General of Montana, was made up for the purpose of exploring this region. Among the party were N. P. Langford, first superintendent of the Park, Cornelius Hedges, T. C. Everts, S. T. Hauser and Lieut. G. C. Doane.

The late Olin D. Wheeler, author and historian, in speaking of N. P. Langford's "The Discovery of Yellowstone Park, 1870," (published by J. E. Haynes, St. Paul), has said:

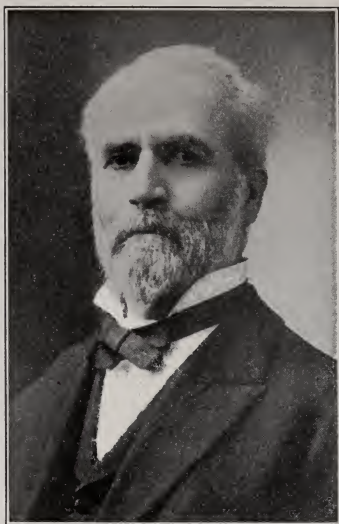
"In 1870 the Washburn party, escorted by a small contingent of U. S. Cavalry, ventured into the untrailed wilderness and mountain fastnesses now known as Yellowstone National Park. Adventures and hardships of varying sorts befell them; a near-tragedy and possible death afflicted them. They returned from a month's wanderings to electrify their countrymen with their tales of what Nature, unknown to us, had so marvelously accomplished through fire and ice in the long ago.

"Nathaniel P. Langford, my esteemed friend of years, who so recently followed the winding trail across the Shadowy Divide, was the diarist of the party, who, most assiduously, and with a blessed prescience, chronicled in this narrative faithfully and in detail, the heroism and success of these explorers. Descriptively and historically the story stands out in the park literature even as Langford stood out among his fellow men, to the end.

"To the Washburn party we owe the establishment of the park in 1872; and one who desires to have a knowledge of the park in its entirety misses much if he does not possess this unpretentious but classic narration."

Many of the prominent features of the Park were named by this party—Mount Washburn, the famous promontory, Old Faithful, the Castle and Beehive Geysers, National Park Mountain, and many other points of interest.

While near Yellowstone Lake, Mr. Everts strayed from the party and was lost in an almost impenetrable country. After a diligent but unsuccessful search for him the party was forced to continue their journey.



NATHANIEL P. LANGFORD 17477

In the meantime Mr. Everts had been overtaken by a severe storm and while searching on foot for evidence of a trail, lost his eye glasses and was unable to return to his horses. Thirty-seven days later he was found by Jack Barronett in a starved and half demented condition crawling on his hands and knees. Happily he fully recovered from his unfortunate experience.

Expeditions in 1871 under Dr. F. V. Hayden of the United States Geological Survey, and Captains Barlow and Heap of the Engineer Corps of the Army resulted in the discovery of Mammoth Hot Springs and the route from the Lower Basin to the Yellowstone River. A map of the outline of the Yellowstone Lake was made, and collections of specimens were gathered throughout the region. The reports which followed were very complete. Pictures painted by Thos. Moran and photographs made by W. H. Jackson added

convincing evidence of the authenticity and beauty of the region.

The first settlers in the Park appeared in 1871. Jim McCartney built a cabin in Clematis Gulch at Mammoth, Jack Baronett built a toll bridge across the Yellowstone River on the Cooke road above the mouth of the Lamar River, and Matthew McQuirk had a cabin near Boiling River on the wagon road between Gardiner and Cooke. They were required later to vacate and were reimbursed by special appropriations made by Congress.

Until 1872, the region was open to settlers without restrictions on hunting, trapping, gathering specimens and the fencing-in of the geysers for private gain. To avoid these dangers the region was set aside as a National Park, March 1, 1872, when President Grant affixed his signature to the Act of Dedication.

The Act of Dedication of Yellowstone National Park

Approved March 1, 1872

BE IT ENACTED BY THE SENATE AND THE HOUSE OF
REPRESENTATIVES OF THE UNITED STATES OF AMERICA
IN CONGRESS ASSEMBLED:

That the tract of land in the Territories of Montana and Wyoming, lying near the headwaters of the Yellowstone River, and described as follows, to-wit: Commencing at the junction of Gardiner River with the Yellowstone River, and running east to the meridian passing ten miles to the eastward of the most eastern point of Yellowstone Lake; thence south along the said meridian to the parallel of latitude passing ten miles south of the most southern point of Yellowstone Lake; thence west along said parallel to the meridian passing fifteen miles west of the most western point of Madison Lake; thence north along said meridian to the latitude of the junction of the Yellowstone and Gardiner Rivers; thence

east to place of beginning—is hereby reserved and withdrawn from settlement, occupancy or sale under the laws of the United States, and dedicated and set apart as a public park or pleasure ground for the benefit and enjoyment of the people; and all persons who shall locate, settle upon or occupy the same or any part thereof, except as hereinafter provided, shall be considered trespassers and removed therefrom.

Sec. 2. The said public Park shall be under the exclusive control of the Secretary of the Interior, whose duty it shall be, as soon as practicable, to make and publish such rules and regulations as he may deem necessary and proper for the care and management of the same. Such regulations shall provide for the preservation from injury or spoliation of all timber, mineral deposits, natural curiosities or wonders within said park and their retention in their natural condition.

The Secretary may, in his discretion, grant leases for building purposes, for terms not exceeding ten years, of small parcels of ground, at such places in said park as shall require the erection of buildings for the accommodation of visitors; all the proceeds of said leases, and all other revenues that may be derived from any source connected with said park, to be expended under his direction, in the management of the same, and the construction of roads and bridle paths therein. He shall provide against the wanton destruction of the fish and game found within said park, and against their capture or destruction for the purpose of merchandise or profit. He shall also cause all persons trespassing upon the same after the passage of this act to be removed therefrom and generally shall be authorized to take all such measures as shall be necessary or proper to fully carry out the objects and purpose of this act."

The year 1872 was an eventful one for the Park. Nathaniel Pitt Langford was appointed the first Superintendent. The first Park map was made. Gibbon (Norris) Geyser Basin was discovered as was Heart Lake Geyser Basin. The

Hayden Survey built the "Anna", first boat of record on Yellowstone Lake, for the purpose of exploration.

In 1873 Captain W. A. Jones took a large party through the Park. He entered it from the head of the Stinking Water, crossing one of the many passes near Mt. Chittenden. After visiting most of the points of interest in the Park he left via the Upper Yellowstone, on the way verifying the old trapper's legend about the "Two Ocean River," and discovering Togwotee pass and a route from the south to the park. This discovery was by far the most valuable result of the expedition.

The Scottish Earl of Dunraven made a tour of the Park in 1874 described in his book *The Great Divide*. Rev. E. I. Stanley, author of *Rambles in Wonderland* visited the Park.

In 1875 Captain William Ludlow, U. S. A., in charge of a reconnaissance in Central Montana, made a hurried trip in the park, and developed little that was new save more accurate measurements of the Upper and Lower Falls of the Yellowstone.

In this same year Captain E. S. Topping built "The Topping", second boat built by white men for navigating Yellowstone Lake. Naturalist George Bird Grinnell prepared the first list of Fauna of the park; and P. W. Norris, who later became Park Superintendent, made his first explorations.

In 1876 Frank Jay Haynes, who later became the Park photographer, opened a studio in Moorhead, Minnesota, which was his headquarters until 1880 when he moved to Fargo, Dakota Territory, where he maintained a studio until 1889, in which year he moved to St. Paul.

In 1877 Chief Joseph and his tribe of Nez Perces passed through the Park; the year that P. W. Norris was made superintendent to succeed N. P. Langford who had held that office five years. Mr. Langford did more for the Park than can be reckoned; he served as superintendent without pay or remuneration of any kind and had pushed the "National Park Idea" from the time the Expedition of 1870 talked of the plan until the Act of Dedication was finally passed in 1872.



CHIEF JOSEPH, NEZ PERCE 13452

The United States Geological Survey resumed work in the Park in 1878 under Dr. F. V. Hayden; and in 1883 a report was published giving detailed descriptions of the points of interest, as well as scientific discussions of the phenomena observed. This report is beautifully illustrated with color-plates, engravings, diagrams and maps.

In 1878 Superintendent Norris built the "Norris Road" which led from Mammoth up over the formations through Snow Pass to Obsidian Cliff, Norris Geyser Basin and to the Lower (Fountain) Geyser Basin. For this purpose Congress appropriated \$10,000. Monument Geyser Basin was discovered by the party building the road. General Nelson A. Miles accompanied by Superintendent Norris made a tour of the Park. Liberty Cap was braced as it was feared it would tumble soon.

In 1879 a block house of squared logs was built on top of Capitol Hill at Mammoth for use as administrative headquarters of the Superintendent. (It was razed in 1909.) The first signs denoting important features and distances were placed in the Park. Norris Pass route from Upper Geyser

Basin to West Thumb via Shoshone Lake discovered by Supt. Norris was opened to saddle horses. Rustic Falls was discovered and named. Haunts of Sheepeater Indians near Osprey Falls were discovered. Montana State passed laws to protect the buffalo.

In 1880 T. Elwood "Billie" Hofer and his brother came to the Park and built a small boat "The Explorer" on Yellowstone Lake. In the winter of 1894 he accompanied Emerson Hough through the Park and in 1907 became President of the T. E. Hofer Boat Company which operated the boat concession on Yellowstone Lake. The first hotel in the Park was built in 1880 by George W. Marshall and Goff his partner. It was called the "Marshall House" and was near the junction of the Firehole River and Nez Perce Creek. They built other mail stations at Riverside and Norris. Harry Yount was appointed first Game Keeper, or ranger, and built a cabin at Soda Butte. Supt. Norris accompanied by photographer H. B. Calfee, Adam (Horn) Miller, and William H. Parker, visited the Hoodoo Region east of the Park. He recommended that this region be included in the Park which was done in 1929. Carl Schurz, Secretary of the Interior visited the Park. F. Jay Haynes opened his studio in Fargo, Dakota Territory.

In 1881 General Phil H. Sheridan and Senator Benjamin Harrison of Indiana made a trip through the Park. In his report of the trip General Sheridan suggested that the present appropriation (\$15,000) is not enough; that an army engineer be detailed to expend it on roads and trails, and that a company or two of cavalry be detailed to be stationed in the Park in summer to protect it. Devils Thumb at Mammoth was recoated by waters from a hot spring above it. F. Jay Haynes made his first visit to the Park, driving his team of horses overland from Bismarck, Dakota Territory, and making photographs of the scenery. He became the Park photographer in 1883.

In 1882 Patrick H. Conger was appointed Superintendent effective February 2nd, succeeding P. W. Norris. "Uncle" John Yancey was permitted to erect a small mail station in

Pleasant Valley and to use it to accommodate teamsters, fishermen, etc. George Henderson, brother of Congressman Henderson of Iowa came to the Park as Assistant Superintendent. Several of his children became identified with the Park later. Walter Henderson storekeeper and Postmaster. Jenny H. Henderson Ash storekeeper and Postmaster at an earlier period. Mrs. Henry Klamer whose husband held contracts for supplying fresh meat, and later the general store concession at Upper Geyser Basin. Mrs. Alex Lyall whose husband was storekeeper and Postmaster for a time at Mammoth. Walter and one of the daughters built the Cottage Hotel.

In 1883 the Northern Pacific branch line was completed to Cinnabar, Mont., and tourist service commenced August 1. The Yellowstone Park Improvement Company was organized; Mammoth Hotel was partly completed and tent hotels were conducted at Lower (Fountain) Geyser Basin, Upper Geyser Basin and Canyon. Road construction was conducted by the U. S. Engineer Corps of the U. S. Army with Lieut. Dan C. Kingman in charge locally. Arnold Hague and John H. Renshawe of the U. S. Geological Survey studied the Park.

In August, 1883, President Arthur with the Secretary of War, Lieutenant-General Sheridan of the Army, Senator Vest, and several other distinguished officers and civilians visited the Park in the most elaborate packtrain expedition that has ever been enrolled. The route lay from Green River on the Union Pacific R. R., to Livingston on the Northern Pacific Railway.

F. Jay Haynes, at that time authorized photographer of the Park, accompanied the party and procured many interesting photographs of the places visited by this famous expedition.

In 1884 Robert E. Carpenter was appointed Park Superintendent effective August 4, succeeding Patrick H. Conger. John Yancey secured a lease permitting him to build a hotel on his site in Pleasant Valley in the Tower Falls area. A hotel was built at Lower Geyser Basin (Fountain) by C. T. Hobart



PRESIDENT ARTHUR'S PARTY AT UPPER BASIN, AUGUST, 1883 26582

of the Yellowstone Park Improvement Company. It was near the junction of Nez Perce Creek and the Firehole River. A concession to conduct a photographic business in Yellowstone Park was granted to F. Jay Haynes, which continued until 1916, when it was transferred to his son J. E. Haynes. In 1884 his first studio was built in the center of the plateau at Mammoth, later moved to the foot of Capitol Hill, and razed in 1928 upon completion of the new Picture Shop.

In 1885 David W. Wear was appointed Park Superintendent to succeed Patrick H. Conger effective May 29. C. T. Hobart and Robert E. Carpenter built a two-story frame hotel at Upper Geyser Basin on the site of the present Old Faithful Inn. The Cottage Hotel at Mammoth was built by Walter Henderson and his sister Helen L. Henderson and was sold later to the Yellowstone Park Association. The "Firehole Hotel" at Lower Geyser Basin (Fountain) was operated by G. L. Henderson and his son-in-law Henry E. Klammer who later operated the general store concession at Old Faithful. Frank Jay Haynes in 1885 bought and operated until 1905 a railroad car which he equipped as a complete photographic

studio known as Haynes Palace Studio Car, which traveled throughout the entire northwest.

In 1886 Captain Moses Harris, First U. S. Cavalry, was appointed Acting Superintendent, first military Superintendent to succeed civilian David W. Wear, effective August 17th. Camp Sheridan near Mammoth Hot Springs just south of Capitol Hill was established as military headquarters. It was still in use after Fort Yellowstone was built in 1892. The Yellowstone Park Association secured leases of the defunct Yellowstone Park Improvement Company and built a hotel at Norris, completed the Mammoth Hotel (razed partly in 1936), and conducted tent hotels at Lower Geyser Basin, Upper Geyser Basin and Canyon.

In 1887 Captain Clinton B. Sears, Engineer Corps, U. S. Army, was in charge of the road construction work in the Park. Norris Hotel was destroyed by fire July 14th and a hotel camp to take its place was immediately constructed. The Yellowstone Park Association built a hotel camp at Lake Outlet.

WINTER EXPLORATION IN 1887.—In January, 1887, the first successful winter exploration of the Yellowstone region was made. Lieutenant Frederick Schwatka of Arctic fame headed the party consisting of several eastern men, F. Jay Haynes, photographer, and a corps of guides, packers and assistants. Their outfit consisted of astronomical instruments, photographic equipment, sleeping bags and provisions which were drawn on toboggans; the party used Norwegian skis and Canadian web snowshoes, but the snow was so light that they sank readily and the toboggans were exceedingly difficult to draw.

Lieut. Schwatka fell ill at Norris and was unable to proceed. Mr. Haynes with Scout Ed. Wilson and two assistants pushed on in order to get a complete set of photographs of the park in winter.

The toboggans were abandoned and this party packed their equipment and provisions on their backs—each man carrying about forty-five pounds.

Norris Basin was a gorgeous sight. Craters heretofore

unnoticed by these men familiar with the Park in summer, steamed conspicuously. The foliage was heavily laden with ice near the steam vents and geysers, producing all the fantastic forms possible to imagine; while the entire basin resembled a vast manufacturing center.

Tall trees buried in the snow appeared like bushes, and the general aspect of the country was completely changed; the average depth of the snow being about eight feet.

The steam rising fully two thousand feet from the geysers at Upper Basin could be seen from the Lower Basin.

The beautifully colored walls of the Grand Canyon were masses of pure white. The north half of the Great Fall hung in immense icicles 200 feet in length. An ice bridge fully 100 feet high was formed at the base of the fall, coming up to the spray line (about one-third the height of the fall). The brink was frozen over and was hidden in an arch of ice a dozen feet thick.

Thousands of elk were seen on the exposed ridges of Mt. Washburn. The trip over Mt. Washburn was one of most unusual hardship and privation; a blinding snowstorm which lasted four days overtook the party of four. During this entire time they wandered day and night without shelter, provisions or fire before reaching Yancey's ranch, an experience that nearly cost them their lives.

The circuit covered was about 200 miles, and the thermometer ranged from 10° to 50° below zero during the twenty-nine days of the trip.

In 1888 Major Chas. J. Allen, Corps of Engineers, U. S. Army, relieved Captain Clinton B. Sears in charge of road construction in the Park. Excelsior Geyser quiescent since 1882 again became active. J. E. Haynes first came to the Park.

In 1889 Captain F. A. Boutelle, First Cavalry, U. S. Army was appointed Acting Superintendent, effective June 2, to succeed Captain Moses Harris. Ole A. Anderson was granted a concession for a small store at Mammoth for sale of bottles of sand, and specimens coated in the hot springs,

manufactured by himself. The Yellowstone Lake Boat Company with E. C. Waters as President and General Manager was organized to operate boats on Yellowstone Lake. Mr. Waters was previously with the Yellowstone Park Association but secured the concession as a separate lease.

Frank Jay Haynes, photographic concessioner in the Park, moved his studio from Fargo to St. Paul, Minnesota, at 6th and Jackson Sts., where his winter headquarters were until his own St. Paul Studio Building was completed in 1895.

In 1890 Lake Hotel and Canyon Hotel were under construction by the Yellowstone Park Association. The last recorded eruption of Excelsior Geyser was July 28. The construction of Fort Yellowstone was commenced. The first edition of the Haynes Guide Book was published. The first road from Cody, Wyoming, to Yellowstone Lake was begun but was not completed until 1903.

In 1891 Captain George S. Anderson, Sixth U. S. Cavalry was appointed Acting Superintendent effective February 15th, to succeed Captain F. A. Boutelle. The Fountain Hotel $\frac{1}{2}$ mile north of the Fountain Paintpot was built at Lower Geyser Basin by the Yellowstone Park Association, and the smaller hotels in the region were abandoned. Lieutenant Hiram Martin Chittenden, Corps of Engineers, U. S. Army, took charge of road construction and improvements in the Park. He left April 2, 1893, but returned as Major, March 25, 1899, and remained in charge until March 31, 1906. Among the important improvements for which he was responsible are the construction of the walks and grounds improvements at Mammoth, construction of the electric light plant, the Superintendent's office, the Milan arch bridge at Canyon, known as the "Chittenden Bridge", the "Chittenden Road" over Mount Washburn and through Dunraven Pass, the Golden Gate Viaduct, and the Northern Entrance Arch.

In 1892 the road from Old Faithful to West Thumb was completed. The War Department completed the construction of Fort Yellowstone about November 1 providing accommodations for a troop of cavalry in addition to the one housed at Camp Sheridan. The temporary hotel at Norris

was burned in May and was replaced by a lunch station under canvas.

In 1894 Honorable John W. Meldrum was appointed the first U. S. Commissioner under the Act of May 4, 1894 and continued in service as Commissioner until the latter part of June, 1935. Chester A. Lindsley came to the park this same year, and began his Yellowstone career as night clerk in Mammoth Hotel.

WINTER EXPEDITION OF 1894.—Early in March, 1894, a party was organized at Fort Yellowstone to visit the winter ranges of the animals, to ascertain the number of buffaloes and photograph them. The party consisted of Captain George L. Scott, Lieut. William W. Forsyth, Scout Felix Burgess, A. E. ("Bobbie") Burns, Photographer Frank Jay Haynes, and three non-commissioned officers including Sergt. Troike. On Norwegian skis, with packs of sleeping bags, provisions and camera, they proceeded directly to Hayden Valley via Norris and the Grand Canyon. They found eighty-one buffaloes in the valley, seventy-three in one herd; and numerous groups of elk. After several days in Hayden Valley the party went to Yellowstone Lake. Captain Anderson, superintendent of the Park, had instructed Scout Burgess not to overlook the country east of the lake, as a small herd of buffaloes usually wintered there. The first day out from the lake they pitched camp about twelve miles up Pelican Creek.

Emerson Hough, eminent writer, and T. E. ("Billie") Hofer spent many days in the park at the same time—the two parties met at the Canyon.

The second day they discovered the "cache" of a poacher, very much to their surprise. It consisted of a canvas tepee, sleeping bag, provisions and toboggan and six buffalo heads suspended in a tree. A trace of fire in the tepee led them to believe that the poacher was in the vicinity, and to capture him was the next move. As it had been snowing constantly all ski tracks leading from the camp were obliterated. Some five miles from the camp, however, they heard five or six rifle shots in rapid succession. Hastening through the timber to an opening they came directly upon the poacher. He had driven



THE POACHER (RIGHT), HIS DOG AND CAPTORS

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six of the buffaloes into the deep snow and slaughtered them all. Fortunately it was snowing hard, and the approach of the scout was not noticed by the poacher or his dog until the arrest was made. He was taken to the Lake Hotel and from there to the guard house at Fort Yellowstone. In addition to the twelve buffaloes that were killed by this poacher a small herd of seven was seen in the Pelican Creek country, making less than 100 then in the Park. Elk were seen in great numbers in the foothills of Mt. Washburn, on Specimen Ridge, along the east fork of the Yellowstone, on Slough Creek and the Yellowstone River to Mt. Everts. Small bands of mountain sheep, deer and antelopes were seen on Mt. Everts. The open water of the Yellowstone between the lake and falls was alive with ducks and swans. Red foxes and coyotes were numerous and an occasional black fox and footprints of mountain lions and bears were seen. The party in about thirty days traveled over 300 miles.

In 1895 the first Haynes shop in the Grand Canyon Hotel was established which beginning in 1896 was under the management of Elliott W. Hunter, veteran photographer of



ELK IN WINTER

the Haynes organization. The Haynes Studio, Selby corner Virginia avenues in St. Paul, Minnesota was completed.

In 1896 Wm. W. Wylie was granted a permit to conduct tourists through the park and provide for them in permanent camps; and continued in this business until about 1917.

In 1897 Colonel S. B. M. Young, U. S. Army, was appointed Acting Superintendent effective June 23, and succeeded Captain George S. Anderson. Mr. Henry E. Klammer, son-in-law of Prof. George Henderson secured a lease and built a general store at Upper Geyser Basin. Haynes Log Cabin Studio was built at Upper Geyser Basin. Fort Yellowstone was enlarged to accommodate two troops of Cavalry instead of one, and Camp Sheridan was abandoned.

In 1898 the Monida & Yellowstone Stage Company was organized by Frank Jay Haynes, who secured a franchise from the Department of the Interior to operate stages through the park entering from the west. For ten years this company operated before the Union Pacific Railway Company finally



THE FORERUNNER OF THE AUTOMOBILE STAGE

built its branch line to the park boundary in 1907, to what is now known as West Yellowstone. The stage company under the name of the Yellowstone-Western Stage Company operated until 1917. Captain James B. Erwin, Fourth Cavalry, U. S. Army was appointed Acting Superintendent of the park effective July 12, 1898, to succeed Colonel S. B. M. Young. The Wylie Permanent Camping Company was permitted to establish permanent camps at Apollinaris Spring, Upper Geyser Basin, Lake Outlet, and Grand Canyon and to provide transportation for their own tourists.

In 1899 Captain Wilber E. Wilder, Fourth U. S. Cavalry was appointed Acting Superintendent to succeed Captain James B. Erwin, effective March 15. Captain Oscar J. Brown, First U. S. Cavalry was appointed Acting Superintendent effective June 23, 1899, to succeed Captain W. E. Wilder. Major Hiram M. Chittenden, U. S. Corps of Engineers again was assigned to take charge of the improvement work in the park effective March 25 and continuing until March 31, 1906.

In 1900 Captain George W. Goode, First Cavalry, U. S. Army, was appointed Acting Superintendent effective July 23 to succeed Captain Oscar J. Brown.

In 1901 Captain John Pitcher, First Cavalry, U. S. Army, was appointed Acting Superintendent effective May 8, to succeed Captain George W. Goode. The Norris Hotel was opened. The Golden Gate Viaduct was constructed by Major Chittenden replacing the wooden viaduct originally built by Lieut. Dan C. Kingman. Silas S. Huntley, General Manager of the Yellowstone Park Transportation Company died at his home in the park.

In 1902 the Northern Pacific Railway extended its line from Cinnabar, Montana to Gardiner, Montana, where it constructed a fine log depot at the new terminal. Colonel Charles J. ("Buffalo") Jones was employed in the park as Buffalo Keeper and the "Show Herd" at Mammoth was established by the purchase of 18 buffalo cows from the Allard herd in Montana and 3 buffalo bulls from the Good-night herd in Texas. Leroy Hill came to the park August 1, having been transferred from the Engineer Office of the Army in St. Louis to the position of Chief Clerk in the park.

In 1903 the road from Cody, Wyoming, to the Eastern entrance, begun in 1890 was completed. President Theodore Roosevelt in company with John Burroughs visited the park. The President dedicated the stone arch at the Northern Entrance which Major Chittenden planned and built. The "Chittenden Bridge" over the Yellowstone River was built making it possible for guests to go to Artist Point without using Uncle Toms Ferry. Old Faithful Inn was being built. The Superintendent's Office at Mammoth originally built by Chittenden for the Engineer Office was completed. The Weather Bureau building at Mammoth was under construction.

In 1904 Old Faithful Inn was opened. "Larry" Matthews who formerly managed the Trout Creek and Norris Lunch stations was made manager. This was his last season in the park. Lake Hotel was enlarged. Major Chittenden

built the steel trestle over the Gardiner River east of Mammoth. It is 410 feet long.

In 1905 Major Chittenden completed the "Chittenden Road" over Mount Washburn and through Dunraven Pass completing The Grand Loop Road of the Park. He built the "S" hill road east of Sylvan Pass—the road that went under itself.

In 1906 Major H. M. Chittenden was succeeded by Captain Earnest D. Peek, Corps of Engineers, U. S. Army effective March 31. The Wylie Permanent Camping Company established a permanent camp at Lost Creek, in the Tower Falls area at the site now occupied as Camp Roosevelt, near Tower Junction.

In 1907 Lieutenant-General S. B. M. Young, United States Army, retired, was appointed Superintendent of the park effective May 14, 1907, to succeed Captain John Pitcher. The Oregon Short Line (Union Pacific System) completed its branch line to the Western Entrance of the park, which branch line was built at the suggestion of Frank Jay Haynes. The Yellowstone Park Boat Company, T. E. Hofer, President, succeeded the Yellowstone Lake Boat Company, E. C. Waters, President. The Yellowstone Park Hotel Company was organized and succeeded the Yellowstone Park Association.

In 1908 Major Harry C. Benson, Fourteenth Cavalry, U. S. Army, was appointed Acting Superintendent effective October 27, to succeed Superintendent Young. The Park Curio Shop was organized by Mesdames Anna K. Pryor and Elizabeth Trischman who purchased Ole Anderson's building and franchise at Mammoth Hot Springs. The military force guarding the park was increased to four troops of cavalry on May 13, and was later replaced by three troops.

In 1909 The Old Block House built in 1879 by Superintendent Norris on Capitol Hill was razed and the squared logs moved to the Buffalo Ranch in Lamar Valley for use in construction there. The new stone buildings at Fort Yellowstone were completed increasing the capacity of the military post to four troops of cavalry.

In 1910 Colonel Lloyd M. Brett, First United States Cavalry, was appointed Acting Superintendent effective September 10, to succeed Major H. C. Benson. Colonel Brett was the last one of the military superintendents.

In 1911 the protective force consisted of four troops of cavalry and a Machine Gun Platoon. The main building of the new stone hospital was constructed and put into use by the Army replacing the old frame hospital. The enlarged Canyon Hotel was remodeled and opened. The Gallatin County road connecting West Yellowstone at the Western entrance of the park with its county seat, Bozeman, Montana, was opened.

In 1912 rail passengers first came into the park via the Eastern Entrance, by stage from Cody, Wyoming, terminus of the Burlington Railway. The stone, non-denominational Chapel at Mammoth Hot Springs was under construction.

In 1913 the Chapel was completed and dedicated. The Monida & Yellowstone Stage Company, F. Jay Haynes, President, was reorganized and its name changed to the Yellowstone-Western Stage Company. George Whittaker, formerly a scout in the park, was made Postmaster and bought the Postoffice store at Mammoth from Lyall & Henderson. Old Faithful Inn was enlarged by the addition of the south wing containing 100 rooms. Mammoth Hotel capacity was increased 124 rooms by the addition of the north wing. The stone hospital annex containing living and mess quarters was completed. Messrs. Amos Shaw and John D. Powell under the name of the Shaw & Powell Camping Company were given a permit to conduct tourists through the park and provide for them in permanent camps. Horace M. Albright, who later became Park Superintendent and Director of the National Park Service began his service as a law clerk in the Department of the Interior on June 2.

In 1914 Henry Brothers received a concession to construct and operate a swimming pool at Upper Geyser Basin. Henry E. Klammer, merchant at Upper Geyser Basin, died.

In 1915 automobiles were first permitted to enter the



BUS AND OLD FAITHFUL GEYSER



BUS AND JUPITER TERRACE

TRANSPORTATION WAS MOTORIZED IN 1918 REPLACING THE HORSE-DRAWN STAGE COACHES



ONE OF THE FIRST AUTOMOBILES TO ENTER THE PARK
AUGUST 1, 1915

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park effective August 1, but under certain restrictions. Stephen T. Mather who later became Director of the National Park Service became Assistant to the Secretary of the Interior. Mr. Mather and the Appropriations committee visited the park using automobiles from Cody to Lake Hotel. C. A. Hamilton purchased the H. E. Klammer General Store at Upper Geyser Basin. The all-time record for horse-drawn vehicles was set by the Yellowstone-Western Stage Company which transported through the park 20,151 tourists. This company operated only from the Western Entrance.

In 1916 the National Park Service was created August 25, by an Act of Congress signed by President Woodrow Wilson. Fort Yellowstone was abandoned by the War Department and troops replaced by civilian rangers. Chester Alanson Lindsley, Assistant Superintendent, was detailed as Acting Superintendent of the park effective October 16 when Colonel L. M. Brett and the military force was withdrawn from the park. The Cody-Sylvan Pass Motor Company, F.

Harris & Ewing



STEPHEN TYNG MATHER, FIRST NATIONAL PARK SERVICE DIRECTOR

Jay Haynes, President, operated the first motor bus line within the park. Its route was between Cody, Wyoming and Yellowstone Lake. The Yellowstone-Western Stage Company was dissolved following the close of the season of 1916

when a new transportation company was formed to handle rail passengers from all entrances by automobile buses. Brigadier General Daniel C. Kingman, U. S. Army, retired, died November 14th. As a Lieutenant he was the first officer in charge of improvements in the park (1883). On January 3, J. E. Haynes succeeded his father, Frank Jay Haynes as photographic concessioner.

In 1917 effective January 12, Hon. Stephen T. Mather became the first Director of the National Park Service. Motorization of the park under the name of the Yellowstone Park Transportation Company was effected. The Wylie Permanent Camping Company and the Shaw & Powell Camping Company were purchased and merged under one company known as the Yellowstone Park Camps Company. Camps were operated at Mammoth, Old Faithful, Riverside, Lake Outlet, Canyon and near Tower Junction (Camp Roosevelt). Troops of the U. S. Army were returned to the park June 26th for protection but did not take over any administrative duties as formerly, nor was the Commanding Officer designated as "Acting Superintendent".

In 1918 the last of the Army troops left the park in the fall leaving control of the park under the National Park Service completely restored. The Army Engineers were removed July 1st leaving the Park Superintendent with his Corps of Civilian Engineers in complete charge of all improvement work. All hotels were closed during the 1918 season as a measure of war economy. The permanent camps at Riverside, Tower Junction and Lake Outlet were closed leaving only those at Mammoth, Old Faithful and Canyon in operation. Acting Superintendent Lindsley recommended the addition of the Jackson Lake and Teton region of Yellowstone Park.

In 1919 Horace M. Albright, first civilian superintendent appointed under the new National Park Service, was appointed Superintendent effective June 28, 1919. He served as Superintendent 10 years and became Director of the National Park Service January 12, 1929. Chester A. Lindsley became Assistant Superintendent in which capacity he served until May

21, 1922 at which time he became Postmaster in Yellowstone Park. He retired June 30, 1935. Riverside and Lake Camps and Lake Hotel were not opened. A temporary camp was established at Lake Outlet for a part of the season. Milton P. Skinner began making collections for a museum which it was contemplated establishing at Mammoth Hot Springs.

In 1920 James McBride was appointed the first Chief Ranger in the park. Milton P. Skinner was named the first Park Naturalist in the park. William C. Gregg first explored the Bechler River country in the southwest corner of the park. Isabel Bassett Wassen was the first lecturer employed by the National Park Service in the park and lectured at Mammoth. Haynes residence at Mammoth was built as a picture shop in 1920, enlarged in 1923, and upon completion of the new building in 1927 was remodeled into a residence to which in 1928 another garage and a darkroom were added.

In 1921 on March 10th Frank Jay Haynes died at the age of 68 years. In 1920 he had completed his fortieth consecutive season of service in the park. Mount Haynes was named at the suggestion of Superintendent Albright and approved by the National Park Service and the U. S. Geographic Board.

The life and activities of FRANK JAY HAYNES, makes an important chapter in the history of Yellowstone National Park.

In 1881, before the Northern Pacific Railway was completed, he drove with horses overland from Bismarck, North Dakota, to the Yellowstone. After making the entire circuit of the Park with his camera he returned with photographic proof that the reports of that wonderful region, brought back by trappers and explorers, had not been exaggerated. In August, 1883, as photographer, he accompanied the distinguished party which included President Arthur, his Secretary of War, Senator Vest, Governor Crosby of Montana, and other prominent men. Later as Official Photographer on two occasions (1887 and 1894), he braved the severe cold and hardships of winter travel in the Park, making extensive trips on skis to secure winter pictures of the animals and natural phenomena.



BEAVER HUT IN WINTER

His closer identification with the Park began in 1884 when he received a concession to conduct a photographic business in the Park, which he held continuously for thirty-two years, until his health began to fail in 1916, when his business was transferred to his son, Mr. J. E. Haynes. In 1898, foreseeing the future possibilities of development of the Western entrance to the Park as a tourist thoroughfare, he organized the Monida & Yellowstone Stage Company, and secured a franchise to operate regular stages through the Park entering from the west. For ten years tourists were taken from the railroad at Monida, Montana, and brought by this stage company for fifty-five miles to the Park. On the strength of his demonstrating the feasibility of this entrance the Union Pacific Railway in 1907 built a branch line to the Western Boundary, and in 1914 the name of his line was changed to the Yellowstone-Western Stage Company. This entrance has since become even more popular than the Gardiner Gateway, 20,151 tourists having been transported by this company in a single year, 1915. This company was dissolved following the close of the season 1916 when a new transportation com-

pany was formed to take care of rail passengers from all entrances and permitted to use automobiles in place of the horse-drawn stages.

His splendid photographs of the Park scenery have been widely distributed all over the world for many years, and their influence in bringing the Yellowstone into its present prominence is beyond estimate. With his death the Park has lost one of its oldest, most unselfish and sincerest friends.

In 1921 William C. Gregg, Colonel C. H. Birdseye and J. E. Haynes and others made an extended trip in the Cascade Corner of the park exploring, surveying and photographing. The opening of the southern automobile route to the park was celebrated at Togwotee Pass. William C. Gregg, Emerson Hough, Superintendent Albright and J. E. Haynes visited and photographed the Grasshopper Glacier country. The stone Lookout was built on the summit of Mt. Washburn. The Lecturer at Mammoth was Miss Mary A. Rolfe.

In 1922 the Semi-Centennial of the establishment of Yellowstone National Park was celebrated at the foot of National Park Mountain, where fifty years before the national



COLONNADE FALLS, BECHLER RIVER—UPPER 35 FEET, LOWER 67 FEET
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BECHLER FALLS, BECHLER RIVER

21113

park idea was conceived in the camp of the Washburn-Langford expedition. Sam T. Woodring succeeded James McBride as Chief Ranger. Joseph Joffe, Assistant to the Superintendent, came to the park as a clerk on May 1st. Leroy Hill was appointed Assistant Superintendent May 22 to succeed Chester A. Lindsley who resigned this position to accept the position of Postmaster succeeding George Whittaker. Dr. F. E. A. Thone conducted the lectures at Mammoth. Haynes Picture Shop in Old Faithful Inn was first opened in 1922, bringing the number of Haynes shops in the hotels to three—Mammoth, Old Faithful and Canyon.

In 1923 Park Naturalist Milton P. Skinner resigned and Dr. F. E. A. Thone became Acting Park Naturalist. President and Mrs. Warren G. Harding with members of his Cabinet and other high officials made a tour of the park entering via Gardiner on June 30th. On July 19th, at Sheepsteater Cliff



SITE OF HOWARD EATON TRAIL DEDICATION CEREMONIES

23323

the Howard Eaton Trail was dedicated in honor of the Dean of guides who conducted more than a hundred horseback parties through the Park.

Haynes Picture Shop was first opened in Lake Hotel in 1923 completing the installation of Haynes shops in the four hotels in the Park.

In 1924 Edmund J. Sawyer was appointed Park Naturalist in January to fill the permanent position vacated by the resignation of M. P. Skinner in 1923. Checking stations were built at the East and West entrances. Supt. Albright accompanied by Chief Ranger Sam. T. Woodring, Photographer J. E. Haynes and Packer Ed Bruce made a six-day pack trip over the mountainous eastern boundary country including Death Gulch, and the Hoodoos for the purpose of studying the boundary of the park. In September Photographer Haynes, Park Naturalist E. J. Sawyer and G. A. Larkin made a six-day boat trip exploring the shores of Yel-



HOWARD EATON AND "DANGER"

11001



HOODOOS AND HOODOO PEAK

24173

lowstone Lake and ascended the peak climbed in 1870 by N. P. Langford from which he drew the first accurate map of the lake. Four former Acting Park Superintendents died, Col. Frazier Augustus Boutelle, February 12, Brig. Gen. James B. Erwin, July 10, Lt. Gen. Samuel B. M. Young, Sept. 1, and Col. Harry C. Benson, September 21. Haynes Picture Shop near Canyon Junction begun the previous season was completed in the spring of 1924. For the previous season an old building in the automobile camp had been used. The employees dormitory at Mammoth was built in the utility area assigned to the Haynes organization near Mammoth Hotel.

In 1925 among the prominent visitors were Dr. Hermon C. Bumpus, Executive Secretary of the American Association of Museums, William H. Jackson, pioneer photographer with the Hayden Surveys of 1871, 1872 and 1878, and Major General Hugh L. Scott. Dr. Bumpus made his first trip through the park with J. E. Haynes then Acting Director of the Yellowstone Park Museums. The Haynes Picture Shop in Canyon Lodge was moved into the building adjoining the main lobby.

In 1926 Lieutenant Colonel John Pitcher former military acting superintendent (1901-1907) died October 12th. The Geophysical Laboratory of the Carnegie Institution of Washington began work in the park on problems connected with the geysers and hot springs. The Bureau of Public Roads took over the highway construction work in the park in 1926.

In 1927 on June 17th was the formal opening of the Gallatin Gateway Inn south of Bozeman, marking the first year that tourists began coming to the park via that station, and over the highway leading to the Western Entrance from the north. Fountain and Norris hotels were razed. The north wing of Old Faithful Inn containing 150 rooms was built. Merrill F. Daum was promoted from Resident Engineer to Assistant Superintendent of the park. Brigadier General Lloyd M. Brett former Acting Superintendent died Sept. 23. Capt. Moses Harris, first military park superintendent, died. Charles W. Cook a pioneer explorer of the park died January 30th. President and Mrs. Calvin Coolidge with their son

John visited the park August 22 to 27. Herbert Hoover, then Secretary of Commerce, visited the park. The Haynes Picture Shop in Mammoth Auto Camp was completed in the spring of 1927 and remodelled in 1934. The Haynes Picture Shop at Old Faithful was completed July 12, 1927. Joseph Joffe who had been with the National Park Service in the park since May 1, 1922 was appointed Assistant to the Superintendent March 1, 1927.

In 1928 the development of museums throughout the park was begun with a donation from the Laura Spelman Rockefeller Foundation, by the American Association of Museums, and the Old Faithful Museum at Upper Geyser Basin was begun. The Firehole Canyon highway was completed. The House of Antlers was built at Mammoth in front of the Museum by Chief Ranger Sam T. Woodring. The new geyser afterward named the Imperial was first observed in eruption July 14th but steam had been observed July 10th. Dorr G. Yeager was appointed Park Naturalist succeeding Edmund J. Sawyer. A duplex Ranger Station was built at the South Entrance. A House Public Lands Committee visited the park and made a special inspection of the Cascade Corner; as did a Senate Public Lands Committee. William C. Gregg, Major General Hugh L. Scott, and Mary Roberts Rinehart were listed among the prominent visitors to the park. Haynes Picture Shop in the Fishing Bridge Automobile Camp begun in 1927 was completed. The Haynes warehouse in the utility area at Mammoth begun last season was completed. Cecil A. Lord who was Assistant Resident Engineer in the park since May 23, 1926 became Resident Engineer January 21, 1928.

In 1929 Horace M. Albright became Director of the National Park Service January 12th, succeeding Stephen T. Mather who resigned on account of ill health. Roger W. Toll succeeded Horace M. Albright as Superintendent of the Park February 1, 1929. Changes were made in the park boundaries to include the Hoodoo Region and the Petrified Trees. Grand Teton National Park was established. Sam T. Woodring was appointed Superintendent of Grand Teton Na-

tional Park. The Haynes Headquarters Building at Mammoth begun in 1928 was completed in the spring of 1929, and the Mammoth Shop was moved into the new building.

In 1930 the park boundaries were further extended. The Gregg Fork of the Bechler River was named in honor of William C. Gregg, explorer of the Cascade Corner.

STEPHEN T. MATHER first entered the Department of the Interior on January 21, 1915 as Assistant to the Secretary, Franklin K. Lane, who prevailed on him to relinquish the active management of his private business and take a public office. The urgent need for an organization to assume control incident to managing the steadily growing system of National Parks was evident to both Secretary Lane and Mr. Mather who both worked toward the establishment of the NATIONAL PARK SERVICE, which was created by an act of Congress, signed August 25, 1916, by President Woodrow Wilson.

Mr. Mather resigned as Assistant to the Secretary to accept the commission of Director of the National Park Service on April 19, 1917. In 1915 Mr. Mather first became interested in the management of the National Parks and Monuments. Early in 1929 after serving as Director for almost twelve years Mr. Mather found it advisable to resign on account of ill health. On January 12, 1929 his close personal friend Horace M. Albright was appointed Director to succeed him. The accomplishments of Director Mather will long be remembered by friends of the national parks. He has set a splendid example of unselfish, able, public-spirited service in administering all of the national parks and monuments. He died in January, 1930.

In 1932 a Proclamation of October 20 enlarged the park by 7,600 acres, under authority of the Act of March 26, 1926. Haynes Picture Shop at West Thumb was opened for business early in the season. The building was enlarged in 1936 in July. The Haynes Store in the Tower Falls Parking Area was opened in the spring of 1932 and enlarged early in July 1936 pending completion of the large Haynes Store and Picture Shop then under construction. Dr. Clyde Max

Bauer became Park Naturalist June 15, 1932 succeeding Dr. Alfred H. Povah resigned.

In 1933 Arno B. Cammerer was appointed Director of the National Park Service on August 10, to succeed Horace M. Albright, resigned.

HORACE M. ALBRIGHT, who on January 12, 1929, became Director of the National Park Service, held office as superintendent of Yellowstone National Park longer than any previous superintendent. In 1912 after graduating from college he became a law clerk in the Department of the Interior in Washington, D. C. He assisted in the establishment of the National Park Service; and in 1917, 1918 and 1919 as Assistant Director and Acting Director of the National Park Service took part in many of the greatest events in national park history.

He became Superintendent of Yellowstone National Park in 1919 at the age of 29. He also served as Assistant Director (Field) and during the winter of 1927-8 acted also as Superintendent of Yosemite National Park in California. He resigned the directorship in August, 1933, to become Vice-President of the United States Potash Co.

In 1934 Hon. James A. Farley, Postmaster General sold the first postage stamp—the 5c one of the National Parks series of ten, at the postoffice in the park on July 30. The 5c stamp of the series carries a picture of Old Faithful Geyser made from the famous photograph taken by Frank Jay Haynes. John William Emmert became Assistant Superintendent September 1, 1934 succeeding Guy D. Edwards who was appointed Superintendent of Grand Teton National Park. The widening of the Golden Gate Highway and Viaduct begun the previous year was completed in 1934.

In 1935 Hon. John W. Meldrum, United States Commissioner since the office was established by law in June 1894, resigned effective at the close of June 30, on account of his advanced years. T. Paul Wilcox of Cheyenne, Wyoming was appointed to succeed Judge Meldrum effective July 1. Chester A. Lindsley, a former Acting Superintendent of the park, was retired as Postmaster under the provisions of the Independ-

ent Offices Bill, effective at the close of June 30, after 40 years of continuous service for the Government in the park as an employee of the National Park Service and the Post-office Department. The new scenic road from Red Lodge, Montana, to Cooke, Montana was opened to admit visitors to the park via the Cooke (Northeast) Entrance. Haynes Store and Picture Shop in a cabin in Camp Roosevelt was opened early in the season of 1935.

In 1936 Roger Wolcott Toll, Superintendent of the Park, was killed Feb. 25, in an automobile accident in New Mexico while on duty connected with the inspection department of the National Park Service. John W. Meldrum died February 27 in Denver at the age of 92 years. Edmund B. Rogers was appointed Superintendent of Yellowstone National Park effective May 25, to succeed Roger W. Toll who died February 25th. Effective June 6, the Yellowstone Park Company was formed and displaced several companies operating in the park, including hotels, lodges, transportation, fuel and boats, with Mr. Wm. M. Nichols, President and Vernon M. Goodwin, Vice President. In July additions were completed on the Haynes Picture Shops at West Thumb and Tower Falls Parking Area. Construction of the permanent Haynes Store and Picture Shop in the parking area at Tower Falls was completed late in 1936, replacing the temporary structure.

In point of travel the season of 1936 established the record, even passing the record of 1935 when 317,998 visitors entered the park. The Grand Loop Road of the Park is a two-way road except for the stretch between Old Faithful and West Thumb, which is now being widened. In about 1938 the entire loop will be two-way as are all of the entrance roads. Dr. C. Max Bauer, Park Naturalist, has been working several years on a comprehensive Place Names Book of Yellowstone National Park which will be ready soon for publication. Mr. Chester A. Lindsley is engaged in the preparation of a History of Yellowstone National Park which he is especially well qualified to write, having been identified with the park ever since 1894 in several official capacities, including that of Acting Superintendent.

Table of Administrative Officers

In the Act of Dedication of March 1, 1872 it was provided that the Park "shall be under the exclusive control of the Secretary of the Interior." Below is the complete list of the Secretaries of the Interior and the Administrations during which they served, and dates of appointment.

I—SECRETARIES OF THE INTERIOR

Administration of
President

Columbus Delano	—Ohio	Nov. 1, '70	U. S. Grant
Zach. Chandler	—Michigan	Oct. 19, '75	U. S. Grant
Carl Schurz	—Missouri	Mar. 12, '77	R. B. Hayes
Sam. J. Kirkwood	—Iowa	Mar. 5, '81	Jas. A. Garfield
Sam. J. Kirkwood	—Iowa	Re-appointed	C. A. Arthur
Henry M. Teller	—Colorado	Apr. 6, '82	C. A. Arthur
L. Q. C. Lamar	—Mississippi	Mar. 6, '85	Grover Cleveland
Wm. F. Vilas	—Wisconsin	Jan. 16, '88	Grover Cleveland
John W. Noble	—Missouri	Mar. 6, '89	Benj. Harrison
Hoke Smith	—Georgia	Mar. 6, '93	Grover Cleveland
David R. Francis	—Missouri	Sept. 1, '96	Grover Cleveland
C. N. Bliss	—New York	Mar. 5, '97	Wm. McKinley
E. A. Hitchcock	—Missouri	Dec. 21, '98	Wm. McKinley
E. A. Hitchcock	—Missouri	Re-appointed	Theo. Roosevelt
Jas. R. Garfield	—Ohio	Jan. 15, '07	Theo. Roosevelt
R. A. Ballinger	—Washington	Mar. 5, '09	Wm. H. Taft
Walter L. Fisher	—Illinois	Mar. 13, '11	Wm. H. Taft
Franklin K. Lane	—California	Mar. 5, '13	Woodrow Wilson
John B. Payne	—Illinois	Mar. 15, '20	Woodrow Wilson
Albert B. Fall	—New Mexico	Mar. 4, '21	W. G. Harding
Hubert Work	—Colorado	Mar. 5, '23	W. G. Harding
Hubert Work	—Colorado	Re-appointed	Calvin Coolidge
Roy O. West	—Illinois	July 25, '28	Calvin Coolidge
Ray L. Wilbur	—California	Mar. 5, '29	Herbert Hoover
Harold L. Ickes	—Illinois	Mar., '32	F. D. Roosevelt

On August 25, 1916 by Act of Congress the National Park Service was established to administer the national parks and monuments.

II—DIRECTORS OF THE NATIONAL PARK SERVICE

Stephen T. Mather, Illinois	Appointed May 16, 1917
Horace M. Abright, California	Appointed Jan. 12, 1929
Arno B. Cammerer, Nebraska	Appointed Aug. 10, 1933

III—YELLOWSTONE PARK SUPERINTENDENTS

N. P. Langford	May 10, 1872 to April 18, 1877
Philetus W. Norris	April 18, 1877 to Feb. 2, 1882
Patrick H. Conger	Feb. 2, 1882 to July 28, 1884
Robert E. Carpenter	Aug. 4, 1884 to May 29, 1885
David W. Wear	May 29, 1885 to Aug. 1, 1886

ARMY OFFICERS DETAILED AS ACTING SUPERINTENDENTS

Capt. Moses Harris	1st Cav., Aug. 17, 1886 to June 2, 1889
Capt. F. A. Boutelle	1st Cav., June 2, 1889 to Dec. 19, 1890
Capt. Geo. S. Anderson	6th Cav., Feb. 15, 1891 to June 23, 1897
Col. S. B. M. Young	3rd Cav., June 23, 1897 to May 18, 1898
Capt. James B. Erwin	4th Cav., July 12, 1898 to March 15, 1899
Capt. W. E. Wilder	4th Cav., March 15, 1899 to June 23, 1899
Capt. Oscar J. Brown	1st Cav., June 23, 1899 to July 23, 1900
Capt. Geo. W. Goode	1st Cav., July 23, 1900 to May 8, 1901
Capt. John Pitcher	1st Cav., May 8, 1901 to July 14, 1907
Gen. S. B. M. Young	(Retired) May 14, 1907 to Oct. 27, 1908
Maj. H. C. Benson	14th Cav., Oct. 27, 1908 to Oct. 26, 1910
Col. L. M. Brett	1st Cav., Sept. 30, 1910 to Oct. 16, 1916

ASSISTANT SUPERINTENDENT DETAILED AS ACTING SUPERINTENDENT

Chester A. Lindsley	Oct. 16, 1916 to June 28, 1919
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APPOINTED FROM CIVIL LIFE

Horace M. Albright	June 28, 1919
Roger Wolcott Toll	February 1, 1929
Edmund B. Rogers	May 25, 1936

PRESIDENTS OF THE UNITED STATES WHO HAVE VISITED YELLOWSTONE NATIONAL PARK

Chester A. Arthur in 1883
Theodore Roosevelt in 1903
Warren G. Harding in 1923
Calvin Coolidge in 1927
Herbert Hoover while Secretary of Commerce in 1928

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YELLOWSTONE NATIONAL PARK



MAMMOTH HOT SPRINGS AREA

The greatest natural exhibit of hot springs and colorful terraces of travertine in the entire world. Jupiter Terrace, Liberty Cap, Devils Kitchen, etc.

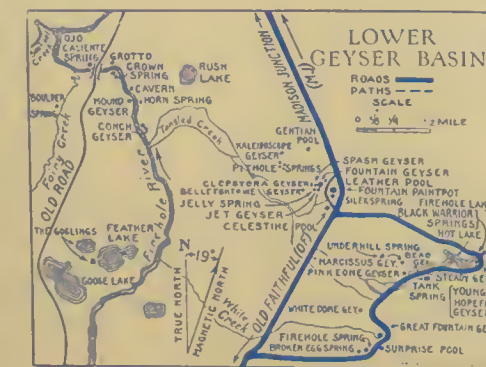
Administrative headquarters for the park, Superintendent's office, U. S. Commissioner's office, Weather Bureau, Post Office, Museum (free), headquarters of Yellowstone Park Company, Pryor Stores, Haynes Picture Shops, Hospital and medical service. All accommodations, services and supplies.



NORRIS GEYSER BASIN

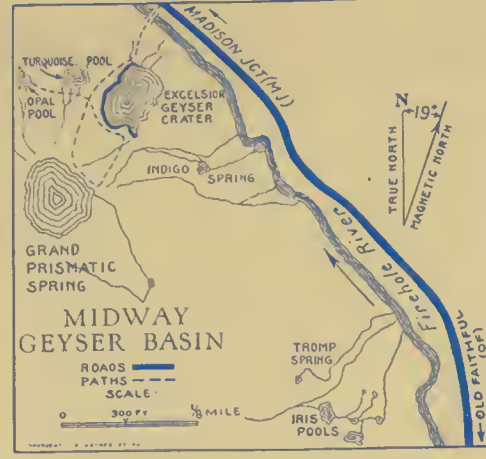
Many erupting geysers, hot pools, steam vents, curious deposits and hot mud pots.

Norris Museum (free) is devoted principally to geological exhibits.



LOWER GEYSER BASIN

Fountain Paintpot, Great Fountain Geyser, and many other erupting geysers, hot pools, mud pots and steam vents.



MIDWAY GEYSER BASIN

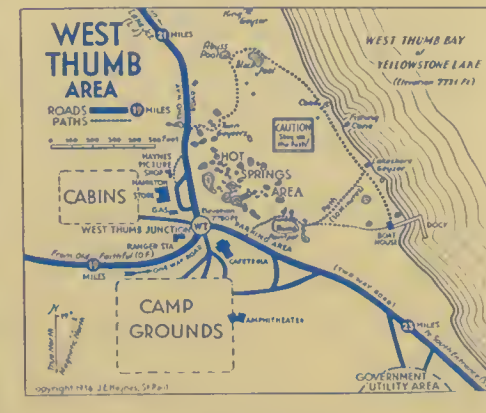
Grand Prismatic Spring, Turquoise Pool, Opal Pool and crater of Excelsior Geyser which was the greatest geyser of record.



UPPER GEYSER BASIN

Greatest geyser basin in the world. Old Faithful Geyser, Riverside Geyser and Daisy Geyser should be seen in action by everyone. Giant, Grand and Castle geysers are among the many which play less frequently. Countless craters, hot pools, steam vents and curious formations.

All accommodations, services and supplies. Old Faithful Museum (free) is devoted principally to exhibits pertaining to geysers and formations.



WEST THUMB AREA

At West Thumb of Yellowstone Lake. Thumb Paintpot, Lakeshore Geyser, Fishing Cone and many pools, mud pots and vents.

Camp grounds, tourist cabins, cafeteria, store, picture shop, ranger station, boat house.



YELLOWSTONE LAKE OUTLET AND FISHING BRIDGE CAMP GROUND

A haven for fishermen—native, cut-throat trout; boating, bathing beaches.

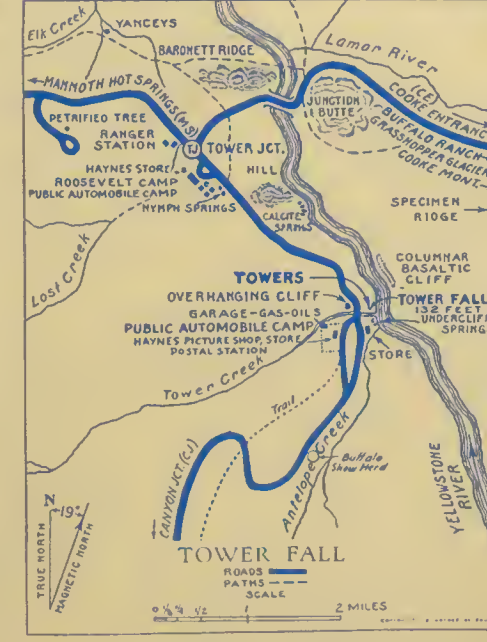
All accommodations, services and supplies. Lake Museum (free) in Fishing Bridge Campground is devoted principally to fish, birds and mammals. U. S. Fish Hatchery.



GRAND CANYON

Great Fall, Upper Fall, gorge of the Yellowstone 1200 feet deep—the most beautifully colored canyon in existence; Uncle Toms Trail, Bear feeding ground, trout fishing.

All accommodations, services and supplies.



TOWER FALL AREA

Tower Fall, Overhanging Cliff, The Needle, Yellowstone gorge, trout fishing, campground.

Store, picture shop, Camp Roosevelt near Tower Junction—cabins, meals, store, picture shop. Ranger station.

DETAIL MAPS and 9 large scale PARK NATIONAL YELLOWSTONE of The New HAYNES MAP

The 552 features listed below are found by reference to columns A to I and rows 1 to 7 on the Haynes Map

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Amphitheater Creek	2-G	Elk Antler Creek	4-E		
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Antelope Creek	2-E	Elk Point	5-F		
Antler Peak, 10,200 ft.	2-B	Elk Tongue Creek	2-F		
Apollinaris Spring	2-C	Escarpment Creek	7-G		
Arrow Canyon	3-D	Everts, Mount, 7,900 ft.	2-D		
Arthur Peak, 10,423 ft.	5-G	Excelsior Geyser Crater	4-B		
Artist Point	3-E				
Artists Paintpots	3-C	F			
Atkins Peak, 11,043 ft.	5-G	Factory Hill, 9,500 ft.	6-D		
Avalanche Peak, 10,560 ft.	5-G	Falls River	7-B		
B					
Badger Creek	6-G	Fawn Creek	2-B		
Bannock Peak	2-B	Ferris Fork	3-F		
Barlow Peak	8-E	Firehole Lake	4-C		
Baronett Peak, 10,300 ft.	2-G	Firehole River	4-B, 5-B		
Basaltic Cliffs	2-E	Fish Hatchery	4-E		
Basin Creek	8-D	Fisher Mountain	1-H		
Batchelder Column	6-B	Fishing Bridge	4-E		
		Fishing Bridge Auto Camp	4-E		



C			I		
Cinder Cone	6-G	Heart Lake	6-E		
Closed Creek	2-H	Heart Lake Geyser Basin	6-E		
Clover Creek	3-G	Heart Lake Ranger Station	6-E		
Cody Peak, 10,246 ft.	4-G	Heart River	6-E		
Cold Creek	4-G	Hedgaa Peak, 9,500 ft.	3-D		
Colonnade Falls	6-D	Hellroaring Creek	2-E		
Colter Peak, 10,500 ft.	6-G	Hellroaring Mt., 8,300 ft.	3-E		
Compass, Diagram of	5-H	Henderson Mountain	1-H		
Cooke Entrance	2-D	Herring Lake	7-C		
Cooke Entrance Ranger Sta.	1-G	Herron Creek	5-C		
Cooke, Montana	1-H	Hills Lake	1-B		
Cottongrass Creek	3-E	Holmes, Mount, 10,300 ft.	3-B		
Cottonwood Creek	1-D	Hoodoo Basin	3-H		
Cougar Creek	3-B	Hoodoo Peak, 10,522 ft.	3-H		
Crandall Creek	4-E	Hoodoo	2-C		
Crater Hills	2-H	Horsehoe Hill, 6,200 ft.	2-C		
Crawfish Creek	7-C	Hot River	2-C		
Crecent Hill, 6,400 ft.	2-E	Hot Peak, 10,522 ft.	5-G		
Crevice Gulch	1-D	Humphreys, Mount, 11,019 ft.	5-G		
Crevice Ranger Station	1-D	Hurricane Mesa	2-F		
D			J		
Death Gulch	3-G	Iceberg Peak	1-H		
Deep Creek	3-F	Index Peak, 11,740 ft.	2-H		
DeLacy Creek	5-C	Indian Creek	2-C		
Delusion Lake	5-E	Indian Peak, 10,929 ft.	3-H		
Devils Kitchen	2-C	Inkpot Spring	3-E		
Dike Mountain, 10,800 ft.	3-1	Inspiration Point	3-E		
Doane, Mount, 10,500 ft.	5-G	Ira Falls	6-B		
Dome Mountain, 9,900 ft.	2-B	Iron Creek	5-B		
Dot Island	5-E	Ira Lake	5-C		
Dragons Mouth Spring	4-E	Jackson, Mount	4-B		
Druid Peak, 9,600 ft.	2-F	Jasper Creek	2-F		
Dryad Lake	3-B	Jones Creek	4-G		
Duck Creek	6-A	Jones Pass	4-F		
Dunanda Falls	3-E	Joseph Peak, 10,300 ft.	2-B		
Dunraven Pass, 8,659 ft.	3-E	Josephs Coat Springs	3-F		
Dunraven Peak, 9,700 ft.	3-E	Junction Butte, 6,500 ft.	2-E		
K					
		Juniper Creek	4-C		
		Kilometers, Scale of	6-H		

(OVER)

